

ADDITIONAL POWER SUPPLY TO IBN-SINA
MODIFICATIONS AT IBN ZAHR 230KV S/S
CONTRACT NO: 11-ER203

IFC SUBMITTAL FOR
DIGITAL FAULT RECORDER SYSTEM

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	X43	ED-305945	01 of 24	00

NOTES

AMETEK S.O.# : 11002273-2

AMETEK DRAWING# : D-1105-211

SAITE P.O. # : API-D-0826-06656

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-305614

ISSUED FOR CONSTRUCTION

AS-BUILT BY _____ DATE _____

00	27/01/15	MA	ISSUED FOR CONSTRUCTION	MP			
REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APP'D.	

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY _____ MA _____ CHECKED BY _____ SCALE: _____ NONE _____

DATE STARTED _____ 28-11-12 _____ DATE COMPLETED _____

DR'G. DEPT. _____ ENG. DEPT. _____

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED

CERTIFIED BY _____ DATE _____

TR-2200 FAULT RECORDER

COVER PAGE

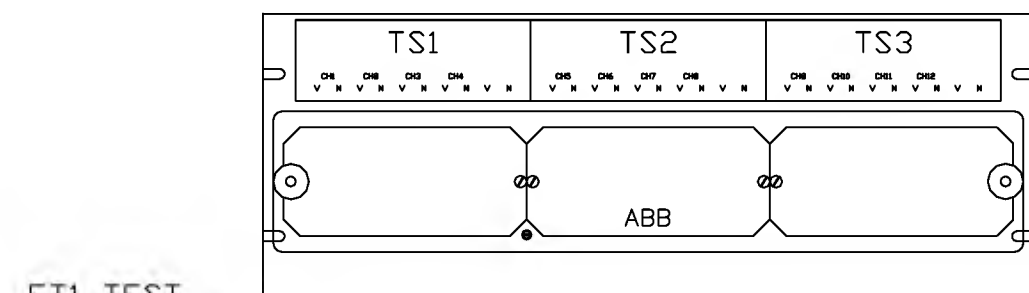
MODIFICATION AT IBN ZAHR S/S

JUBAIL SAUDI ARABIA

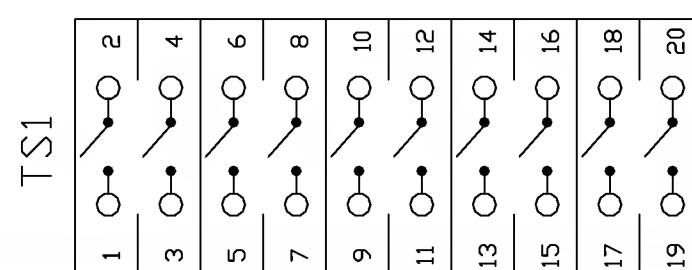
JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	X43	ED-305945	01 of 24	00

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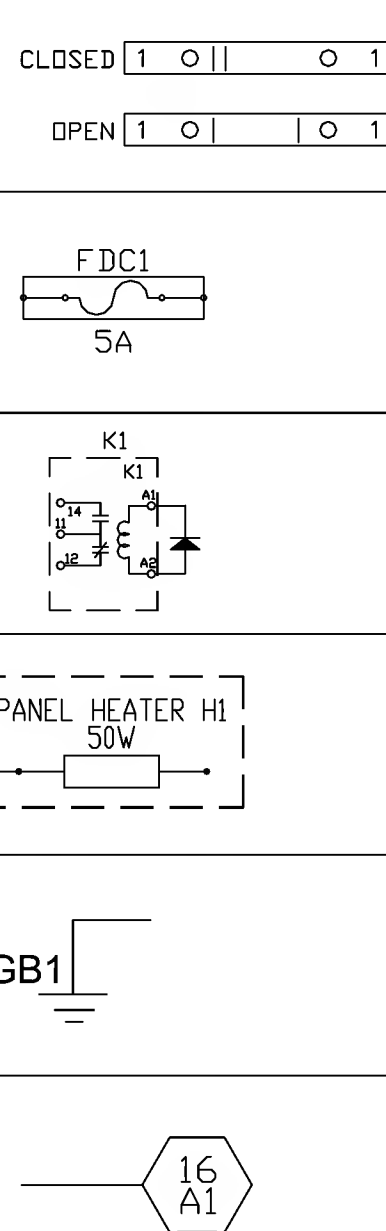
SCHEMATIC
SYMBOL



LAYOUT DRAWINGS



SCHEMATIC
SYMBOL



FLOURESCENT LIGHT FIXTURE

FAN WITH
SPEED CONTROL

INSTALLATION NOTES:

1. CUSTOMER WIRING SHOWN DASHED. AMETEK FACTORY WIRING SHOWN SOLID.
2. EACH CABINET IS EQUIPPED WITH 90° DOOR STOPS AND PADLOCK TYPE DOOR HANDLES.
3. THE CABINET IS RATED IP41, WITH FRONT / REAR ACCESS & TOP / BOTTOM CABLE ENTRY.

EXTERIOR FINISH: RAL7038
INTERIOR FINISH: RAL9003

SERVICE NOTES:

1. THE TR-2000 SYSTEM IS WIRED FOR 32 ANALOG AND 128 DIGITAL CHANNELS.
2. THE TR-2000 HAS BEEN CONFIGURED AND CALIBRATED AT THE FACTORY AS FOLLOWS:
CHANNELS CURRENT: REF. WIRING
CHANNELS VOLTAGE: REF. WIRING
3. BOTH VOLTAGE INPUT AND CICT OUTPUTS ARE TO BE WIRED TO FT-19R VOLTAGE TEST SWITCHES. THE FULL-SCALE SIGNAL APPLIED TO THE TR-2000 INPUT FOR VOLTAGE CHANNELS IS 300V PEAK AND 2V PEAK FOR CURRENT CHANNELS.
4. CICT'S (CURRENT ISOLATOR CT) ARE PROVIDED LOOSE PIECE FOR CURRENT INPUTS. CICT OUTPUT IS 70.7mVAC (RMS) AT THE RATED NOMINAL INPUT (1A/5A AMPS). FULL-SCALE CURRENT IS 20 TIMES THE NOMINAL VALUE (20/100 AMPS).
5. TO CHANGE A CHANNEL FROM CURRENT TO VOLTAGE OR FROM VOLTAGE TO CURRENT, CHANGE THE JUMPER ON THE INPUT MODULE AND RE-CALIBRATE THE INPUT (REF. TO THE TR-2000 INSTRUCTION MANUAL.)
6. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC.
7. SYSTEM POWER IS 125VDC. THE COURTESY OUTLET, LIGHT AND PRINTER REQUIRE 220VAC. THERE IS ALSO 120VAC OUTLET AVAILABLE.
8. TR-2000 VISUAL STATUS INDICATORS ARE ON THE FRONT OF THE TR-2000. STATUS OUTPUTS ARE WIRED TO X101.
9. ALL LABELING TAGS SHOWN ARE ENGRAVED LAMACOID, BLACK LETTERING ON WHITE BACKGROUND. REFERENCE PAGE 9 FOR TAG DETAILS.
10. ALL DIMENSIONS ARE IN INCHES [MM].
11. CIRCLED NUMBERS WITH ARROWS INDICATE THE BILL OF MATERIAL REFERENCED ON PG 10.

33

AMETEK S.O.# : 11002273-2

AMETEK DRAWING# : D-1105-211

SAITE P.O. # : API-D-0826-06656

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-305614

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REV. NO.	DATE	BY	DESCRIPTION	CHKD.	CERT.	APPD.

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Saudi Electricity Company

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DATE STARTED 28-11-12 DATE COMPLETED _____
OPR'G. DEPT. _____ ENG. DEPT. _____

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TR-2200 FAULT RECORDER

DRAWING SYMBOLS SHEET

MODIFICATION AT IBN ZAHR S/S

JUBAIL	SAUDI ARABIA	4
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INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
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P	X43	ED-305945	03 of 24	00
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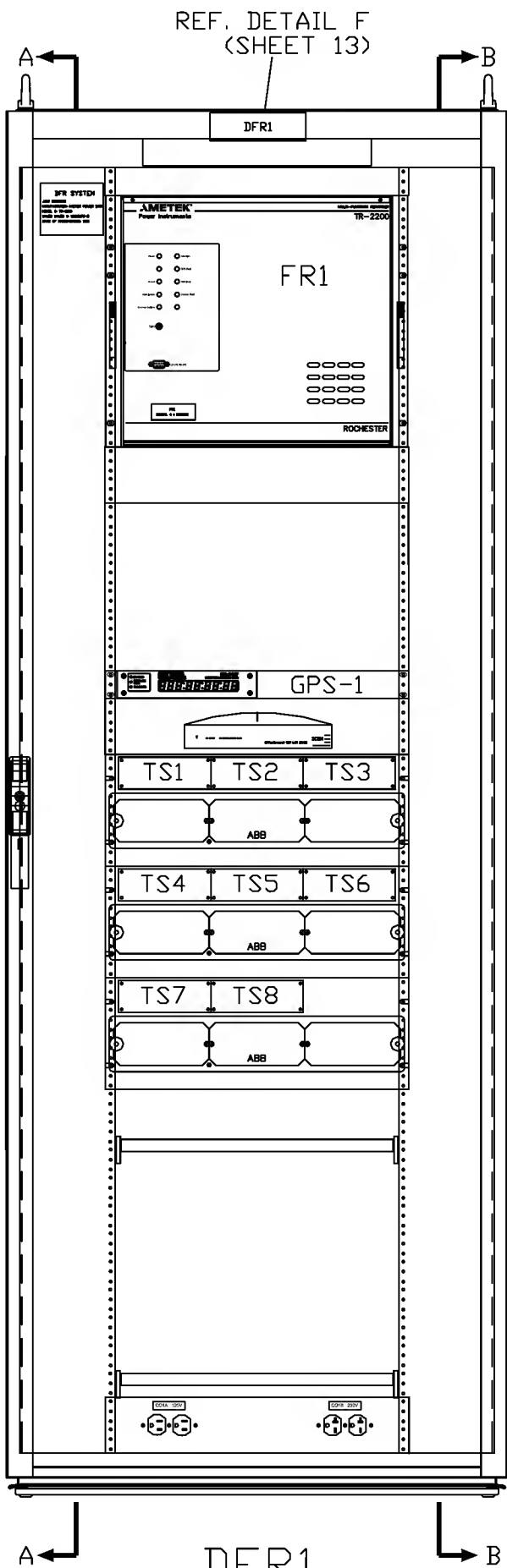
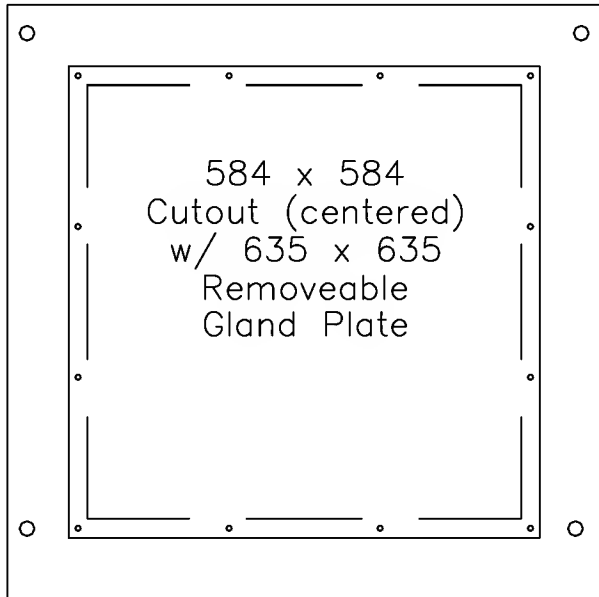
SEC-ERB CAD-A (2002/04)

1105-211_3.DWG DMS VECTOR Cada03

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1		2		3		4		5		6		7		8	
JOB ORDER NO.		INDEX		DRAWING NUMBER		SHEET NO.		REV. NO.		REV. NO.		REV. NO.		REV. NO.	
3-1213004		P		ED-305945		04 of 24		00							

TOP VIEW



FRONT VIEW (VIEWING DOOR INSTALLED)

NOTES

INSTALLATION NOTES:
1. CUSTOMER WIRING SHOWN DASHED. AMETEK FACTORY WIRING SHOWN SOLID.
2. EACH CABINET IS EQUIPPED WITH 90° DOOR STOPS AND PADLOCK TYPE DOOR HANDLES.
3. THE CABINET IS RATED IP41, WITH FRONT / REAR ACCESS & TOP / BOTTOM CABLE ENTRY.
EXTERIOR FINISH: RAL7038
INTERIOR FINISH : RAL9003

SERVICE NOTES:
1. THE TR-2000 SYSTEM IS WIRED FOR 32 ANALOG AND 128 DIGITAL CHANNELS.
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6. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC.
7. SYSTEM POWER IS 125VDC. THE COURTESY OUTLET, LIGHT AND PRINTER REQUIRE 220VAC. THERE IS ALSO 120VAC OUTLET AVAILABLE.
8. TR-2000 VISUAL STATUS INDICATORS ARE ON THE FRONT OF THE TR-2000. STATUS OUTPUTS ARE WIRED TO X101.
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10. ALL DIMENSIONS ARE IN INCHES [MM].
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الشركة السعودية للكهرباء
Saudi Electricity Company

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TR-2200 FAULT RECORDER

SYSTEM FRONT VIEW

MODIFICATION AT IBN ZAHR S/S

JUBAIL SAUDI ARABIA

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3-1213004	P	X43	ED-305945	04 of 24	00

1105-211_4.DWG

SEC-ERB CAD-A (2002/04)

DMS VECTOR

Code03

1		2		3		4		5		6		7		8	
00		05 of 24		ED-305945		X43		P		3-1213004		3-1213004		3-1213004	
JOB ORDER NO.		SHEET NO.		DRAWING NUMBER		PLANT NO.		INDEX		REV. NO.		REV. NO.		REV. NO.	

A

B

C

D

E

F

[2200mm]

[800mm]

SEE DETAIL F
(SHEET 13)

SEE DETAIL G
SHEET 13

CD1B 18

CD1A 38

DFR1

GROUND LUG 24

REAR VIEW

(DOOR REMOVED)

GROUND BUS 44

DFR1

FL1

11 FL1

10 CABINET

1 FR1

33 GPS CLOCK

39 3COM MODEM

SEE DETAIL C
SHEET 13

30 TEST SWITCH

35 LAPTOP SHELF

35 PRINTER SHELF

NOTES

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1. CUSTOMER WIRING SHOWN DASHED. AMETEK FACTORY WIRING SHOWN SOLID.
2. EACH CABINET IS EQUIPPED WITH 90° DOOR STOPS AND PADLOCK TYPE DOOR HANDLES.
3. THE CABINET IS RATED IP41, WITH FRONT / REAR ACCESS & TOP / BOTTOM CABLE ENTRY.
EXTERIOR FINISH: RAL7038
INTERIOR FINISH: RAL9003

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SAITE P.O. # : API-D-0826-06656

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TR-2200 FAULT RECORDER

TR-2200 SYSTEM REAR VIEW

MODIFICATION AT IBN ZAHR S/S

JUBAIL SAUDI ARABIA

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3-1213004	P	X43	ED-305945	05 of 24	00

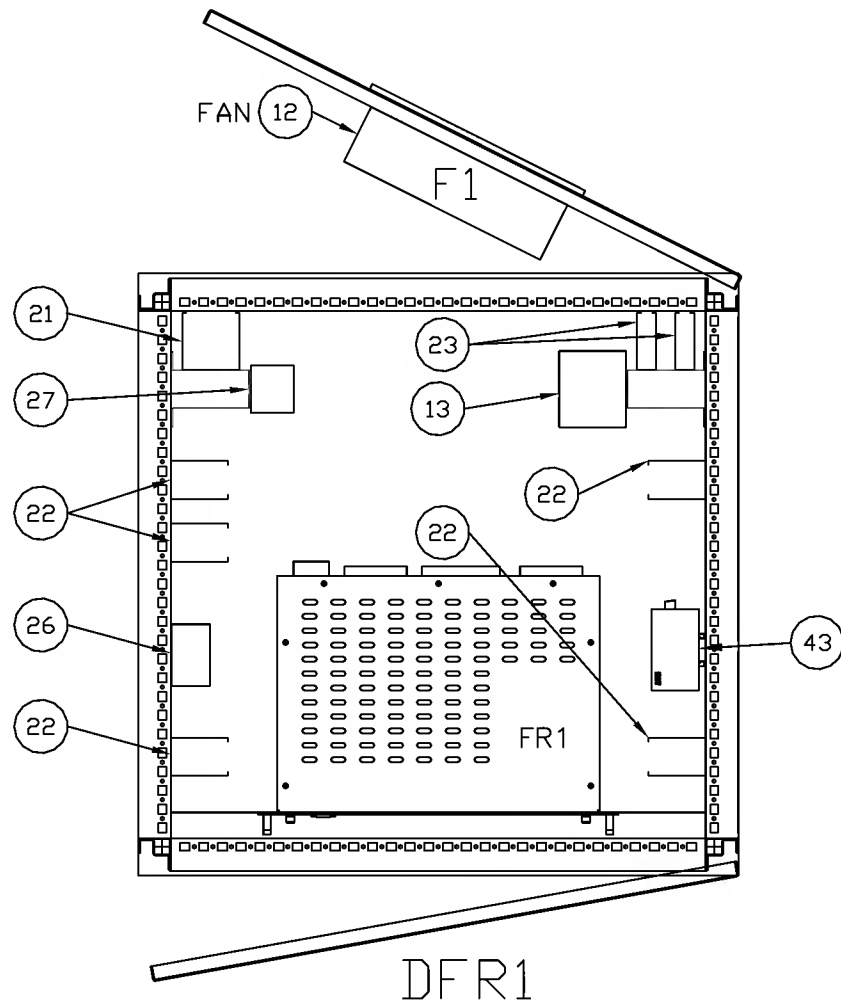
SEC-ERB CAD-A (2002/04)

DMS VECTOR Code03

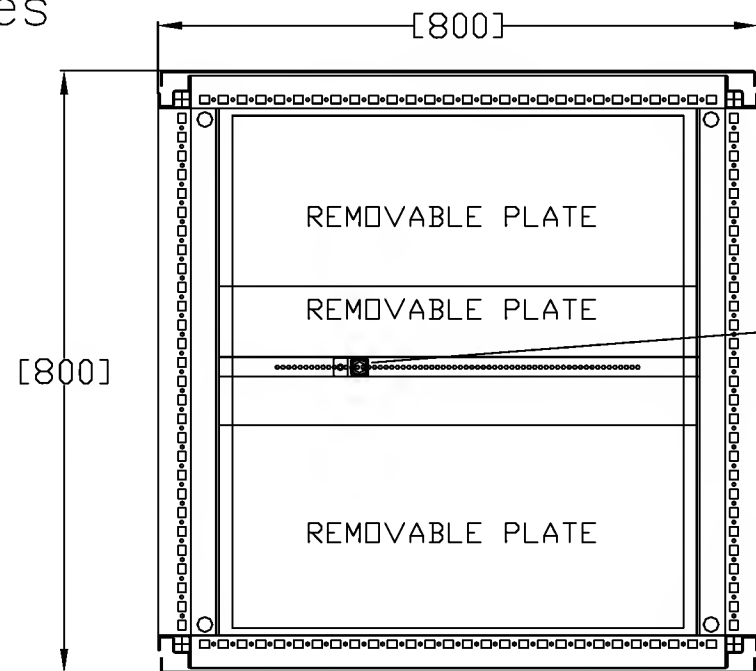
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00	07 of 24	ED-305945	X43	P	3-1213004	JOB ORDER NO.
REV. NO.	SHEET NO.	DRAWING NUMBER	PLANT NO.	INDEX		

TOP VIEW
(TOP COVER REMOVED)

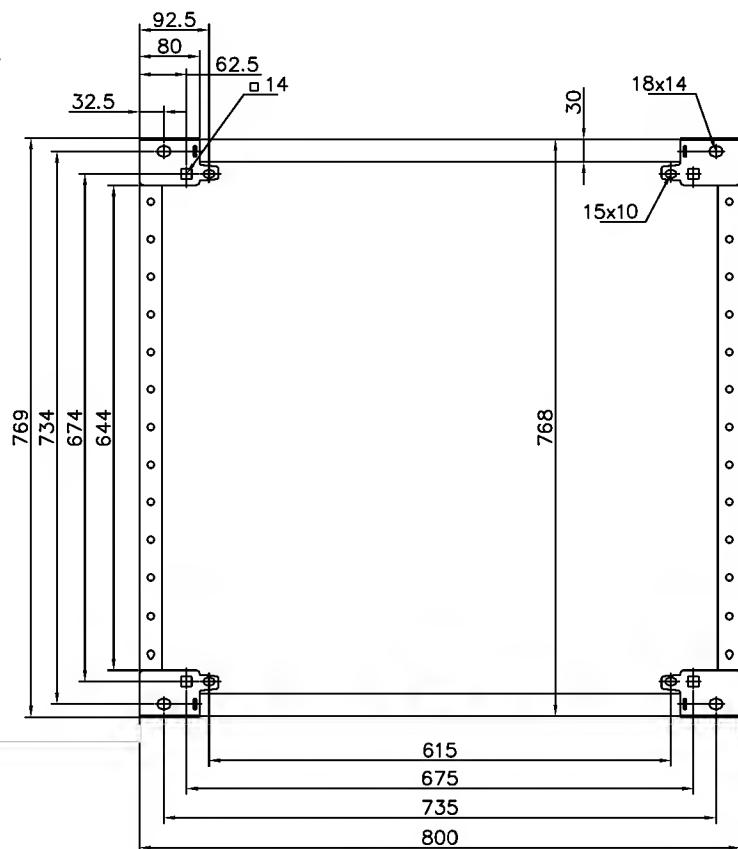


Cabinet Bottom Detail
-removable gland plates



GROUND BUS GB1 (44)
(55) TAPPED HOLES PER BAY
#6-32 SCREWS

Cabinet Channel Base / Mounting Detail



NOTES

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TR-2200 FAULT RECORDER

TR2000 SYSTEM TOP / BOTTOM VIEW

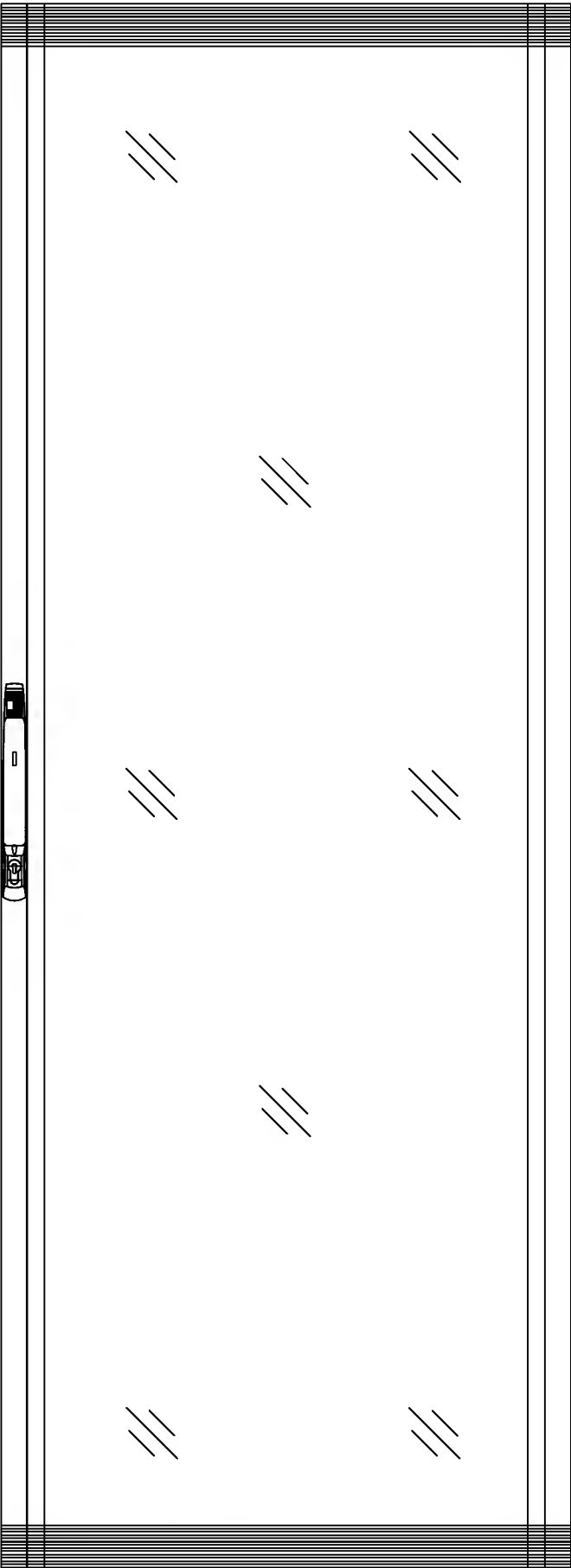
MODIFICATION AT IBN ZAHR S/S

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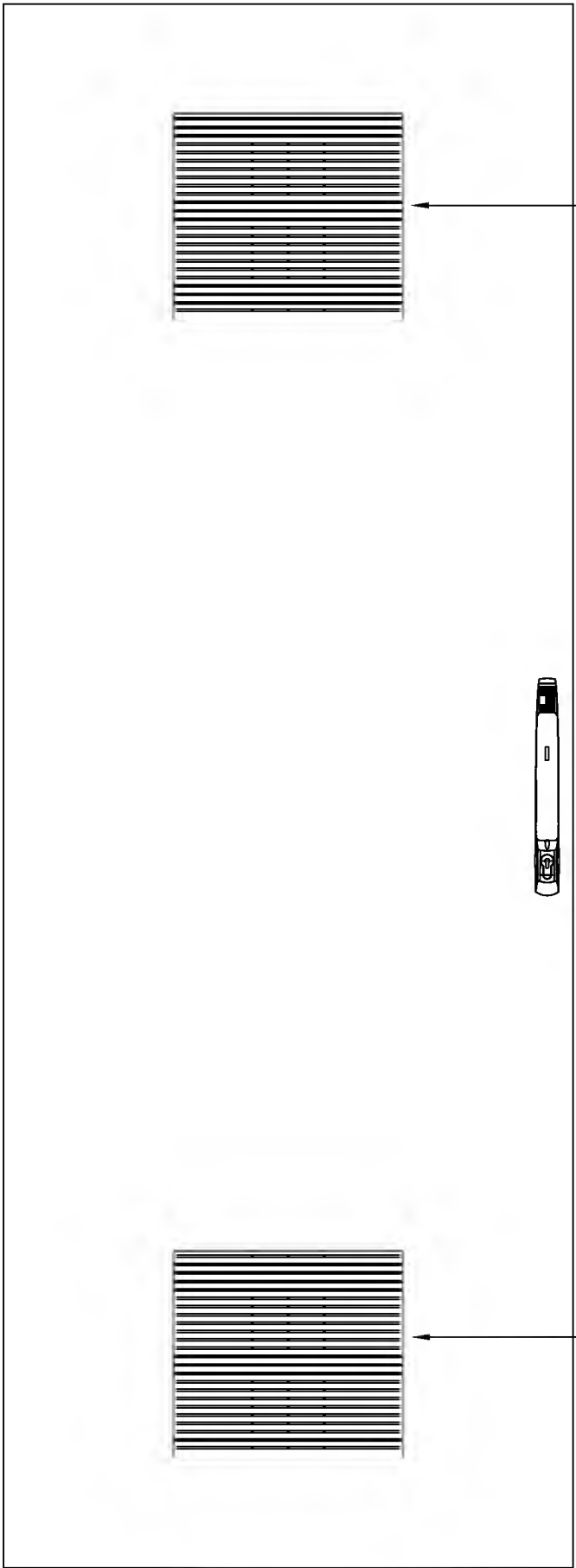
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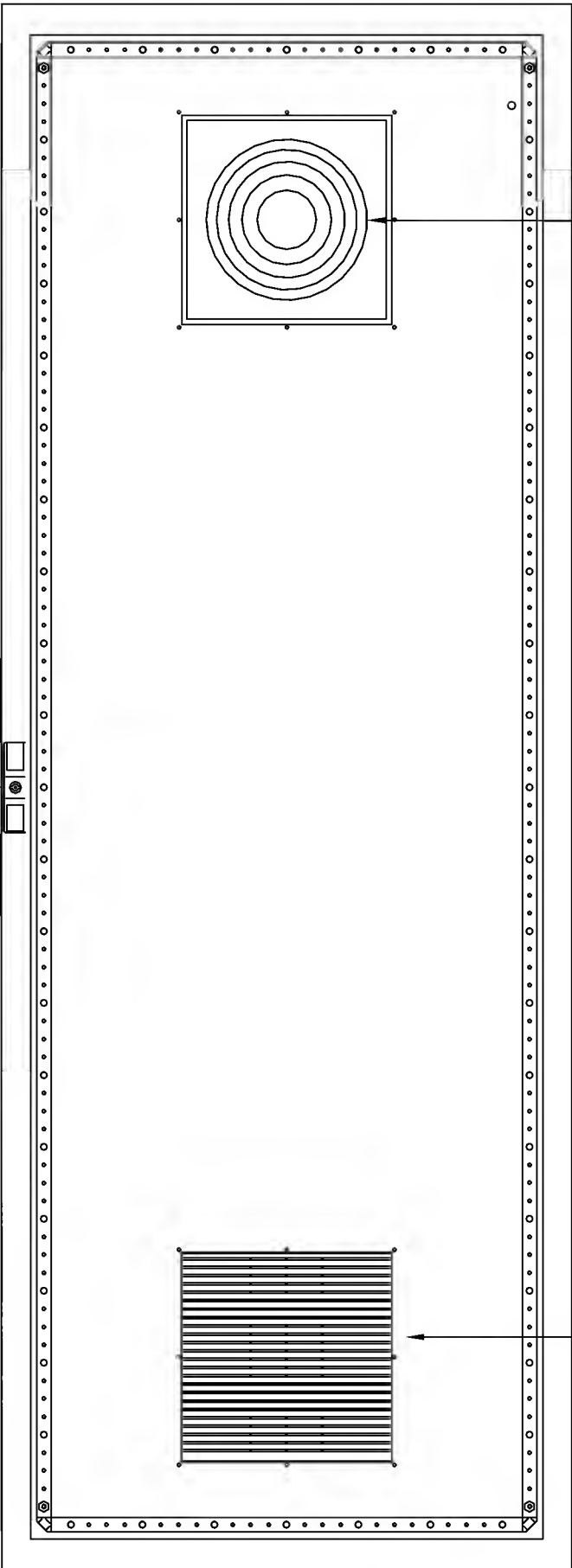
A
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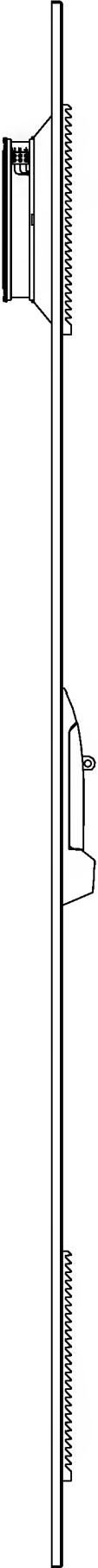
FRONT VIEWING DOOR
- SINGLE-PANE SAFETY GLASS
- EXTRUDED ALUMINUM FRAME
- POWDER COAT FINISH



REAR DOOR
(FRONT VIEW)



REAR DOOR
(REAR VIEW)



REAR DOOR
(SIDE VIEW)

NOTES

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TR-2200 FAULT RECORDER

SYSTEM FRONT / REAR DOOR DETAIL

MODIFICATION AT IBN ZAHR S/S

JUBAIL SAUDI ARABIA

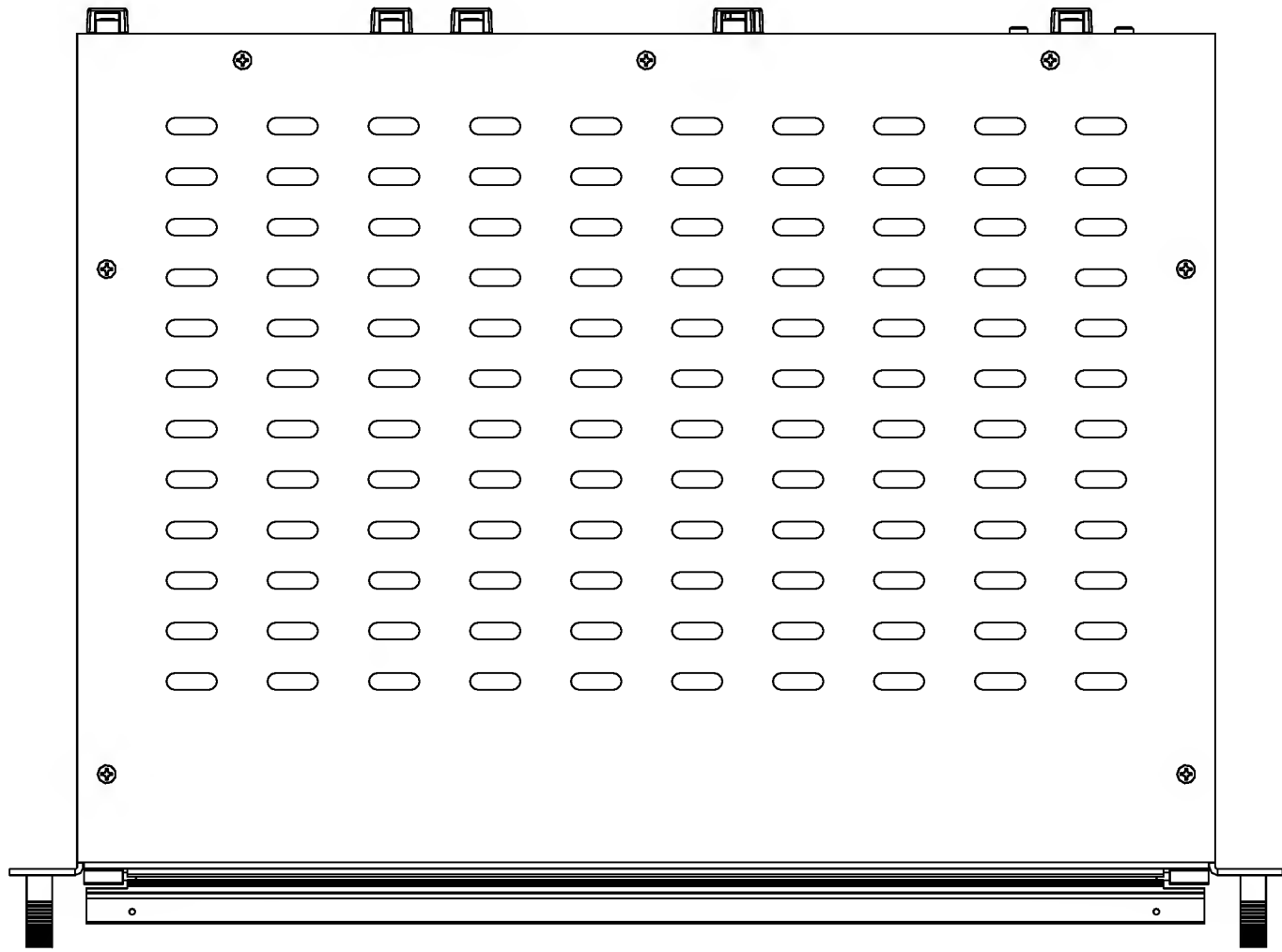
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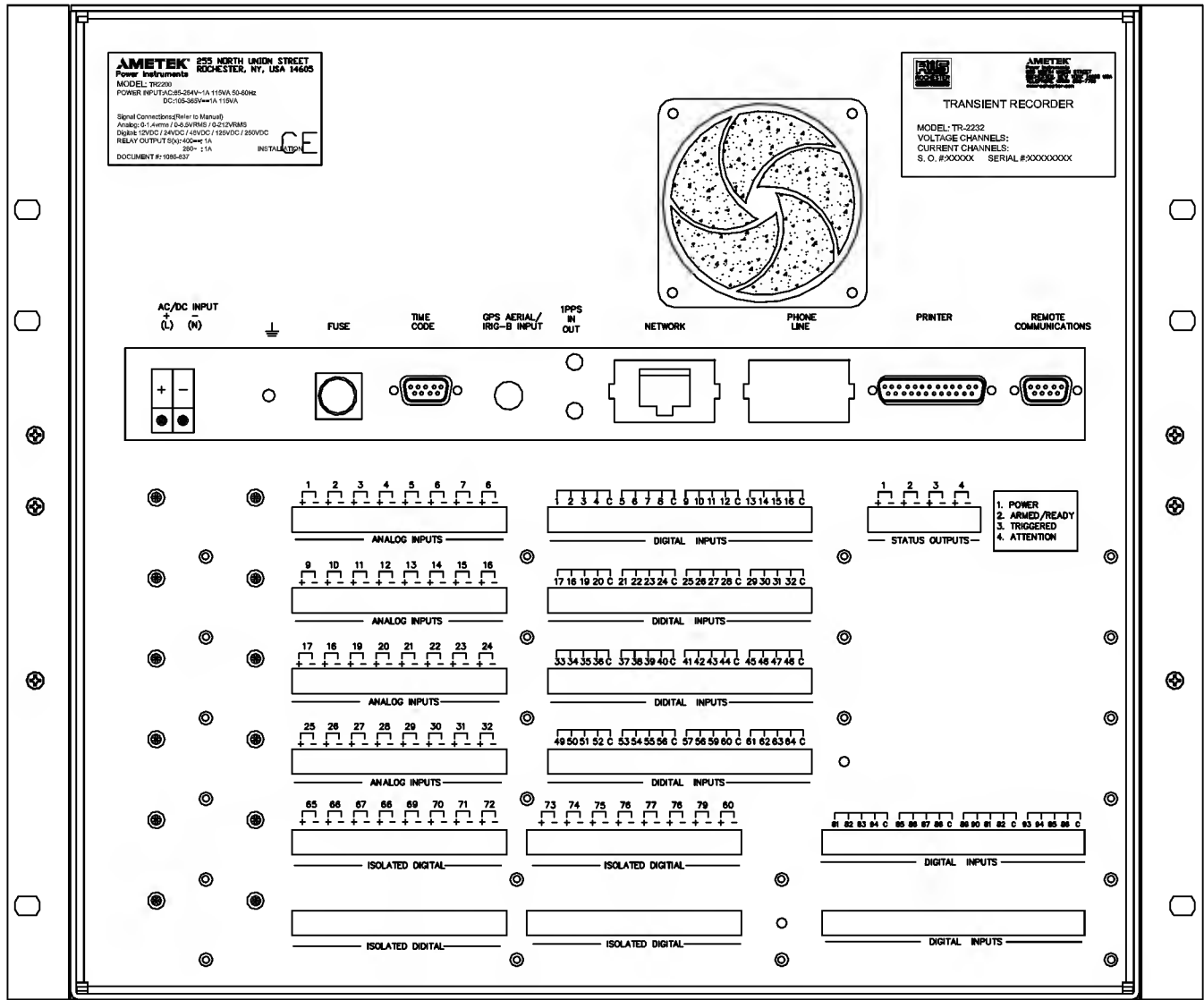
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TR-2232-D2

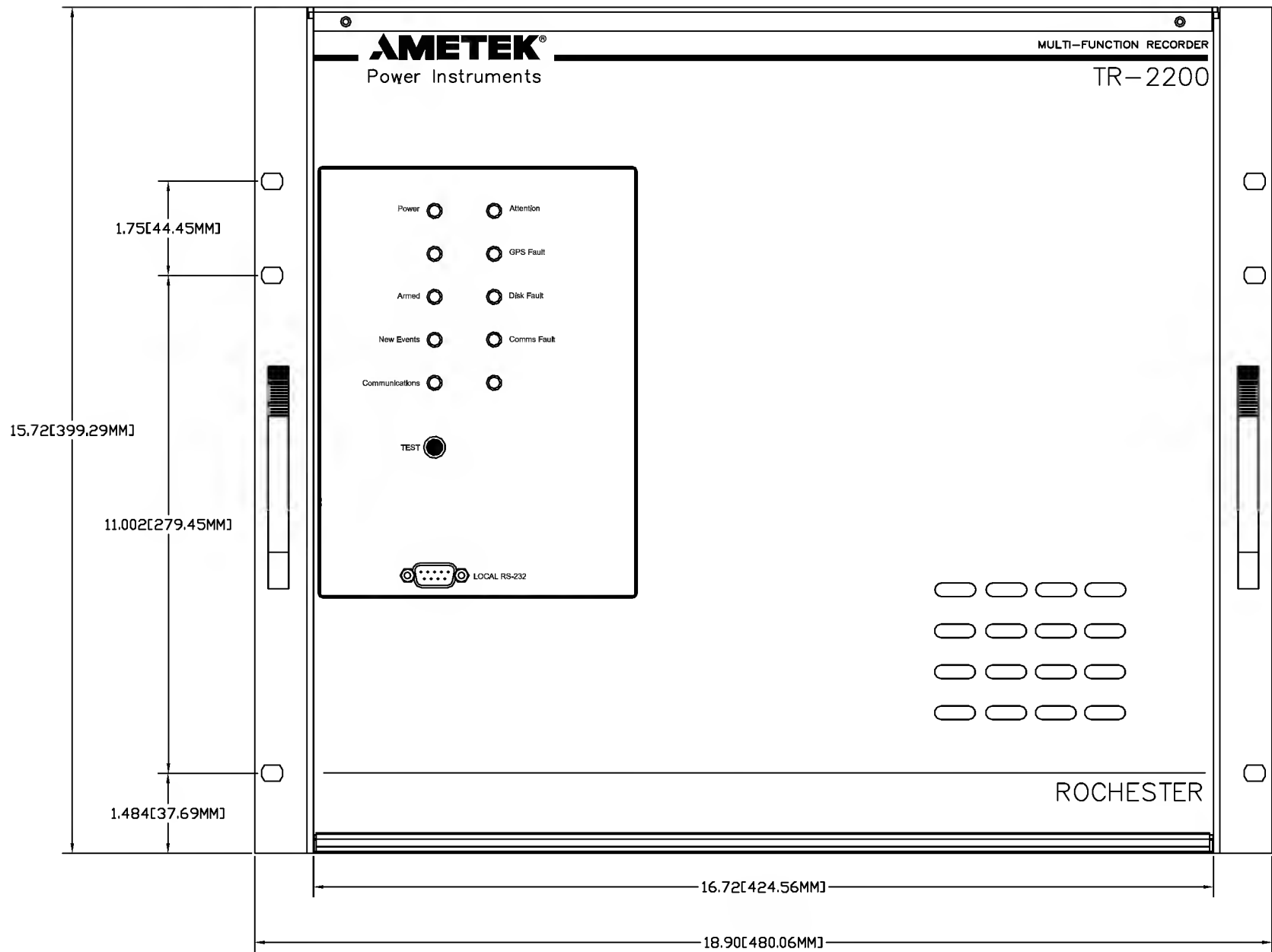
TOP VIEW



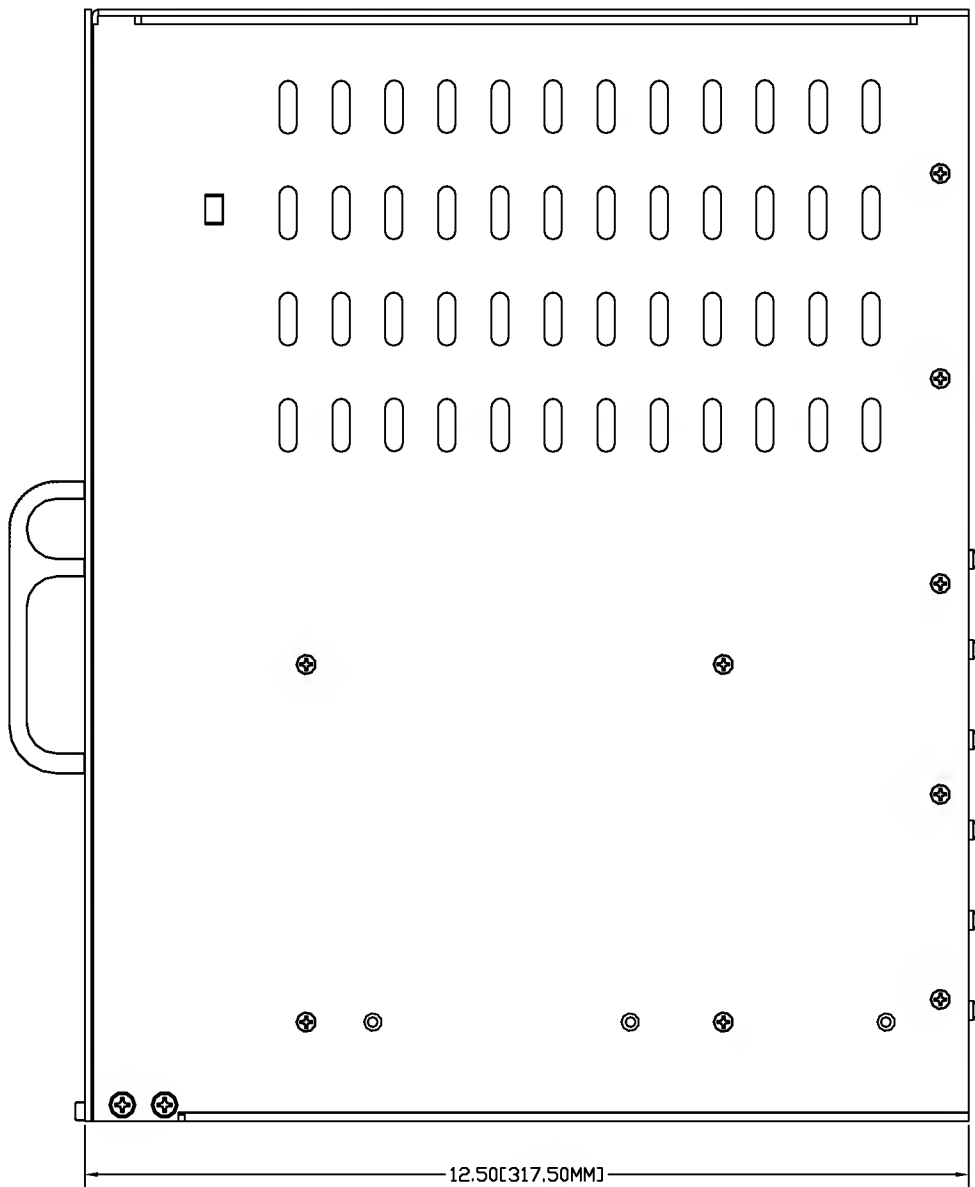
REAR VIEW



FRONT VIEW



SIDE VIEW



NOTES

INSTALLATION NOTES:

1. CUSTOMER WIRING SHOWN DASHED. AMETEK FACTORY WIRING SHOWN SOLID.
2. EACH CABINET IS EQUIPPED WITH 90° DOOR STOPS AND PADLOCK TYPE DOOR HANDLES.
3. THE CABINET IS RATED IP41, WITH FRONT / REAR ACCESS & TOP / BOTTOM CABLE ENTRY.

EXTERIOR FINISH: RAL7038
INTERIOR FINISH: RAL9003

SERVICE NOTES:

1. THE TR-2000 SYSTEM IS WIRED FOR 32 ANALOG AND 128 DIGITAL CHANNELS.
2. THE TR-2000 HAS BEEN CONFIGURED AND CALIBRATED AT THE FACTORY AS FOLLOWS:
CHANNELS VOLTAGE: REF. WIRING
CHANNELS VOLTAGE: REF. WIRING
3. BOTH VOLTAGE INPUT AND CICT OUTPUTS ARE TO BE WIRED TO FT-19R VOLTAGE TEST SWITCHES. THE FULL-SCALE SIGNAL APPLIED TO THE TR-2000 INPUT FOR VOLTAGE CHANNELS IS 300V PEAK AND 2V PEAK FOR CURRENT CHANNELS.
4. CICT'S (CURRENT ISOLATOR CT) ARE PROVIDED LOOSE PIECE FOR CURRENT INPUTS. CICT OUTPUT IS 70.7mVAC (RMS) AT THE RATED NOMINAL INPUT (1A/5A AMPS). FULL-SCALE CURRENT IS 20 TIMES THE NOMINAL VALUE (20/100 AMPS).
5. TO CHANGE A CHANNEL FROM CURRENT TO VOLTAGE OR FROM VOLTAGE TO CURRENT, CHANGE THE JUMPER ON THE INPUT MODULE AND RE-CALIBRATE THE INPUT (REF. TO THE TR-2000 INSTRUCTION MANUAL.)
6. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC.
7. SYSTEM POWER IS 125VDC. THE COURTESY OUTLET, LIGHT AND PRINTER REQUIRE 220VAC. THERE IS ALSO 120VAC OUTLET AVAILABLE.
8. TR-2000 VISUAL STATUS INDICATORS ARE ON THE FRONT OF THE TR-2000. STATUS OUTPUTS ARE WIRED TO X101.
9. ALL LABELING TAGS SHOWN ARE ENGRAVED LAMACOID, BLACK LETTERING ON WHITE BACKGROUND. REFERENCE PAGE 9 FOR TAG DETAILS.
10. ALL DIMENSIONS ARE IN INCHES [MM].
11. CIRCLED NUMBERS WITH ARROWS INDICATE THE BILL OF MATERIAL REFERENCED ON PG 10.

AMETEK S.O.# : 11002273-2
AMETEK DRAWING# : D-1105-211
SAITE P.O. # : API-D-0826-06656

REFERENCE DRAWINGS	
DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-305614

ISSUED FOR CONSTRUCTION

AS-BUILT BY: _____ DATE: _____

00 27/01/15 MA ISSUED FOR CONSTRUCTION MP

REV. NO. DATE BY DESCRIPTION CHKD. CERT. APP'D.

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MA CHECKED BY: _____ SCALE: NONE
DATE STARTED: 28-11-12 DATE COMPLETED: _____
OPR'G. DEPT.: _____ ENG. DEPT.: _____

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED

CERTIFIED BY: _____ DATE: _____

TR-2200 FAULT RECORDER
TR-2232-D2 RECORDER DETAIL
MODIFICATION AT IBN ZAHR S/S
JUBAIL SAUDI ARABIA

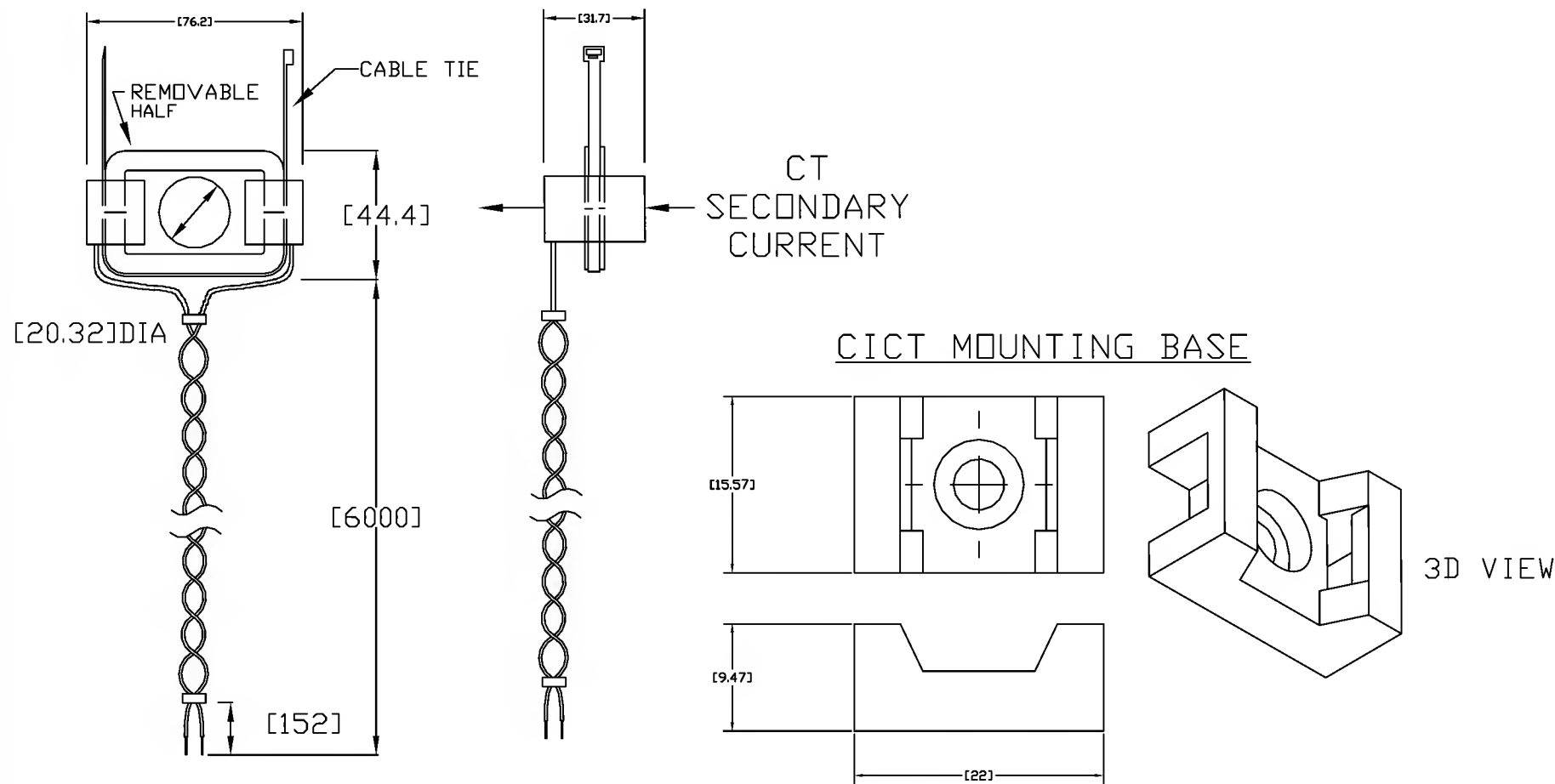
JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	X43	ED-305945	10 of 24	00

1105-211_10.DWG
SEC-ERB CAD-A (2002/04)
DMS VECTOR Code03

00	12 of 24	ED-305945	X43	P	3-1213004	JOB ORDER NO.
REV. NO.	SHEET NO.	DRAWING NUMBER	PLANT NO.	INDEX		

TYPICAL INPUT CONNECTIONS

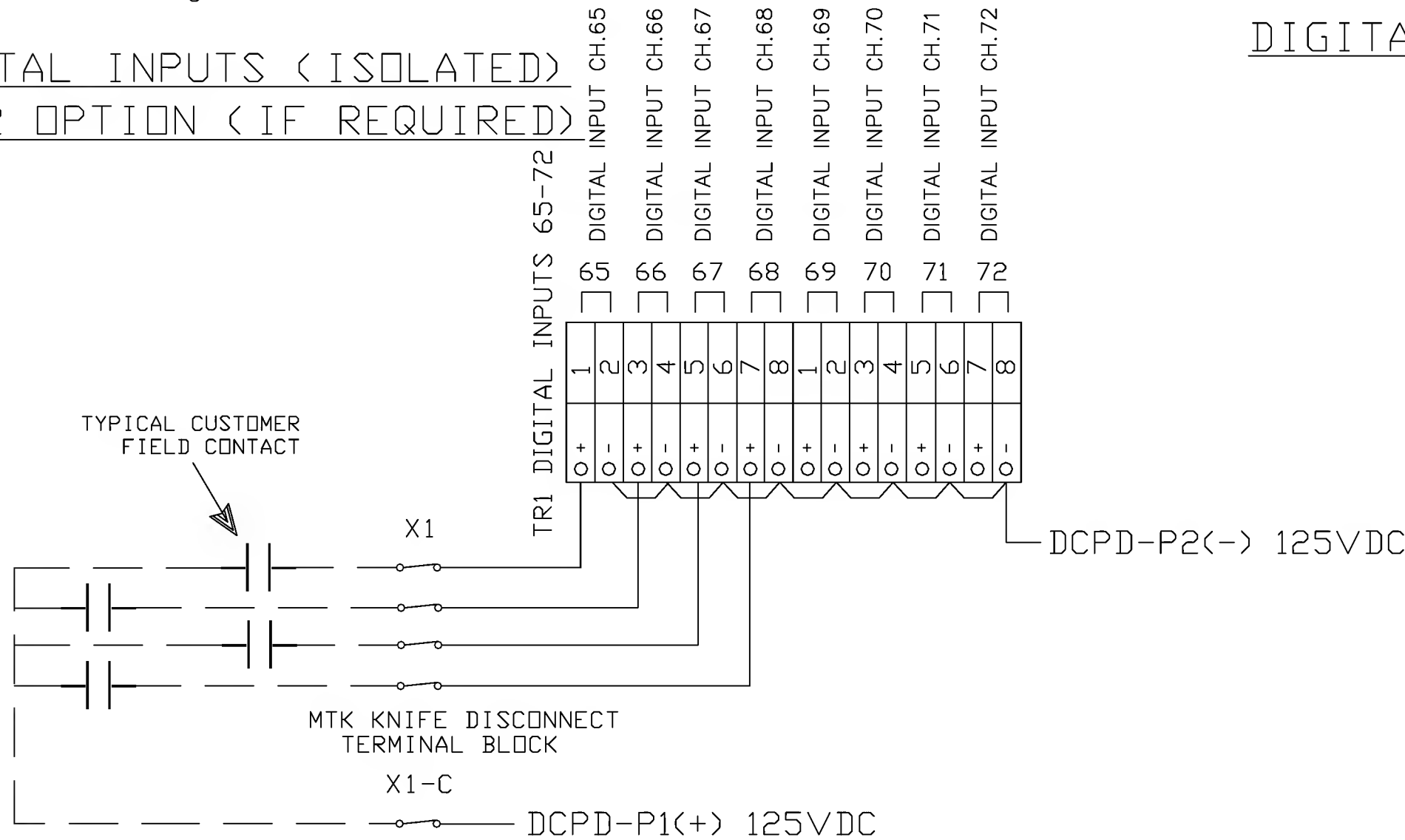
SPLIT CORE Current Isolation Current Transformer (CICT) OUTLINE DRAWING



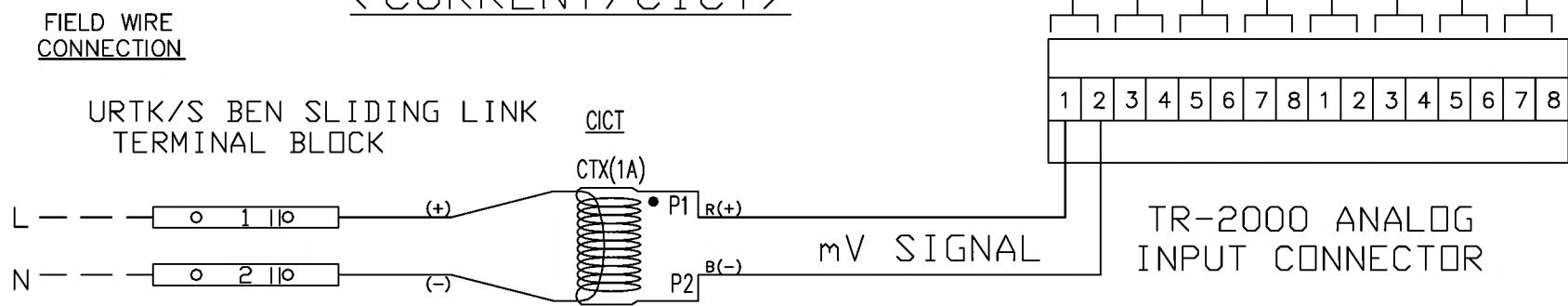
Notes:

- Appropriate AMETEK P/N and Nominal current will be put on transformer in bold white letters. Markings will be on start side of transformer core (non-removable half) to indicate start of single turn (user-supplied) primary winding. For more detailed operation see A-1064-713.
- Top half of core is completely removable to allow customer insertion of primary wire (single turn) through core window. A cable tie is provided to secure both halves together for semi permanent mounting.

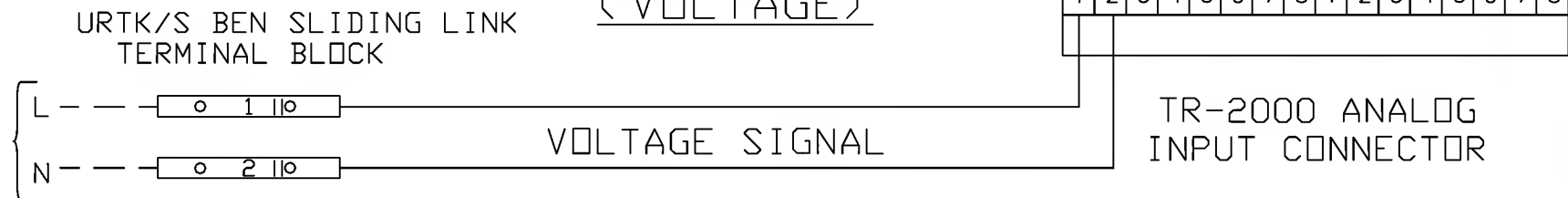
DIGITAL INPUTS (ISOLATED) D1/D2 OPTION (IF REQUIRED)



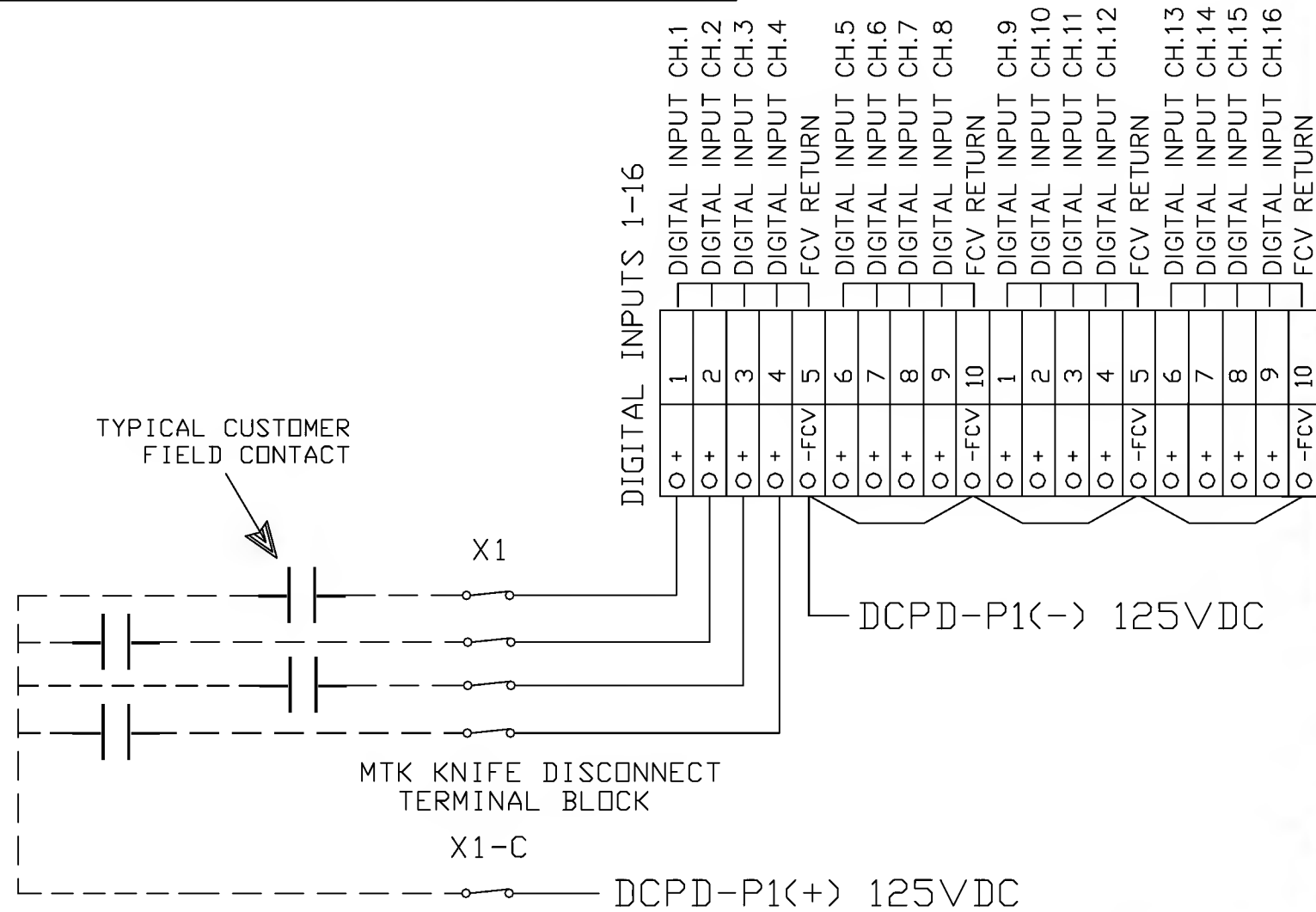
ANALOG INPUTS (CURRENT/CICT)



ANALOG INPUTS (VOLTAGE)



DIGITAL INPUTS (NON-ISOLATED)



NOTES

- INSTALLATION NOTES:
- CUSTOMER WIRING SHOWN DASHED. AMETEK FACTORY WIRING SHOWN SOLID.
 - EACH CABINET IS EQUIPPED WITH 90° DOOR STOPS AND PADLOCK TYPE DOOR HANDLES.
 - THE CABINET IS RATED IP41, WITH FRONT / REAR ACCESS & TOP / BOTTOM CABLE ENTRY. EXTERIOR FINISH: RAL7038 INTERIOR FINISH: RAL9003

SERVICE NOTES:

- THE TR-2000 SYSTEM IS WIRED FOR 32 ANALOG AND 128 DIGITAL CHANNELS.
- THE TR-2000 HAS BEEN CONFIGURED AND CALIBRATED AT THE FACTORY AS FOLLOWS:
CHANNELS CURRENT: REF. WIRING
CHANNELS VOLTAGE: REF. WIRING
- BOTH VOLTAGE INPUT AND CICT OUTPUTS ARE TO BE WIRED TO FT-19R VOLTAGE TEST SWITCHES. THE FULL-SCALE SIGNAL APPLIED TO THE TR-2000 INPUT FOR VOLTAGE CHANNELS IS 300V PEAK AND 2V PEAK FOR CURRENT CHANNELS.
- CICT'S (CURRENT ISOLATOR CT) ARE PROVIDED LOOSE PIECE FOR CURRENT INPUTS. CICT OUTPUT IS 70.7mVAC (RMS) AT THE RATED NOMINAL INPUT (1A/5A AMPS). FULL-SCALE CURRENT IS 20 TIMES THE NOMINAL VALUE (20/100 AMPS).
- TO CHANGE A CHANNEL FROM CURRENT TO VOLTAGE OR FROM VOLTAGE TO CURRENT, CHANGE THE JUMPER ON THE INPUT MODULE AND RE-CALIBRATE THE INPUT (REF. TO THE TR-2000 INSTRUCTION MANUAL.)
- DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC.
- SYSTEM POWER IS 125VDC. THE COURTESY OUTLET, LIGHT AND PRINTER REQUIRE 220VAC. THERE IS ALSO 120VAC OUTLET AVAILABLE.
- TR-2000 VISUAL STATUS INDICATORS ARE ON THE FRONT OF THE TR-2000. STATUS OUTPUTS ARE WIRED TO X101.
- ALL LABELING TAGS SHOWN ARE ENGRAVED LAMACOID, BLACK LETTERING ON WHITE BACKGROUND. REFERENCE PAGE 9 FOR TAG DETAILS.
- ALL DIMENSIONS ARE IN INCHES [MM].
- CIRCLED NUMBERS WITH ARROWS INDICATE THE BILL OF MATERIAL REFERENCED ON PG 10.

33

AMETEK S.O.# : 11002273-2

AMETEK DRAWING# : D-1105-211

SAITE P.O. # : API-D-0826-06656

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-305614

ISSUED FOR CONSTRUCTION

AS-BUILT BY: _____ DATE: _____

00 27/01/15 MA ISSUED FOR CONSTRUCTION MP

REV. NO. DATE BY DESCRIPTION CHKD. CERT. APPD.

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MA CHECKED BY: _____ SCALE: NONE

DATE STARTED: 28-11-12 DATE COMPLETED: _____

DRG'G. DEPT. _____ ENG. DEPT. _____

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED

CERTIFIED BY: _____ DATE: _____

TR-2200 FAULT RECORDER

TYPICAL INPUT CONNECTIONS

MODIFICATION AT IBN ZAHR S/S

JUBAIL SAUDI ARABIA

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	X43	ED-305945	12 of 24	00

1105-211_12.DWG

SEC-ERB CAD-A (2002/04)

DMS VECTOR Code03

AMETEK S.O.# : 11002273-2	
AMETEK DRAWING# : D-1105-211	
SAITE P.O. # : API-D-0826-06656	
REFERENCE DRAWINGS	
DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-305614

AS-BUILT BY _____ DATE _____

الشركة السعودية للكهرباء
Saudi Electricity Company

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--	--------------------------------------

SYSTEM PERIPHERAL CONNECTIONS
MODIFICATION AT IBN ZAHB S/S

INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
P	X43	ED-305945	14 of 24	00

7	1105-211_14.DWG	SEC-ERB CAD-A (2002/04)	DMS VECTOR	Cada03
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1	2	3	4	5	6	7	8
JOB ORDER NO.	3-1213004	INDEX	P	X43	DRAWING NUMBER	ED-305945	REV. NO.
JOB ORDER NO.	3-1213004	INDEX	P	X43	DRAWING NUMBER	ED-305945	REV. NO.
JOB ORDER NO.	3-1213004	INDEX	P	X43	DRAWING NUMBER	ED-305945	REV. NO.

A

B

C

D

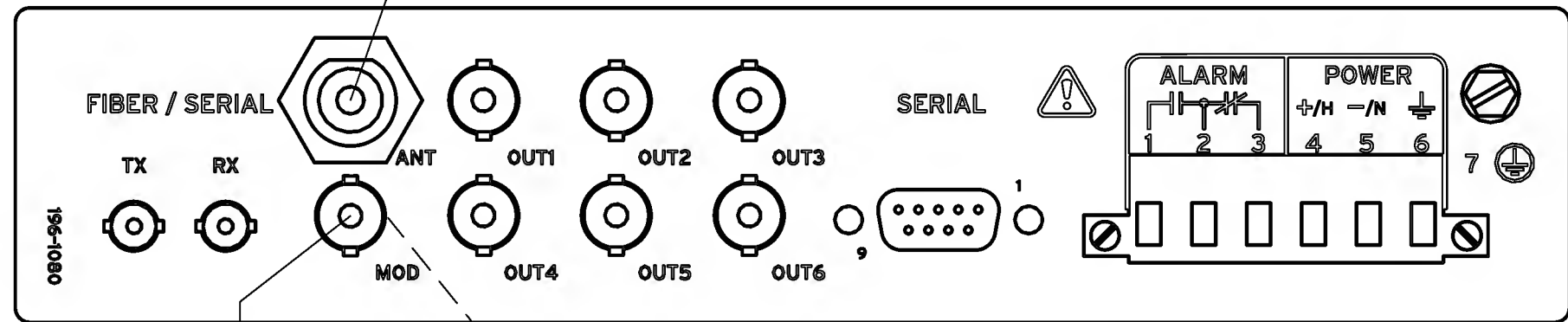
E

F

SYSTEM PERIPHERAL CONNECTIONS

SEL 2407 GPS RECEIVER VIEW LOCATED IN DFR1

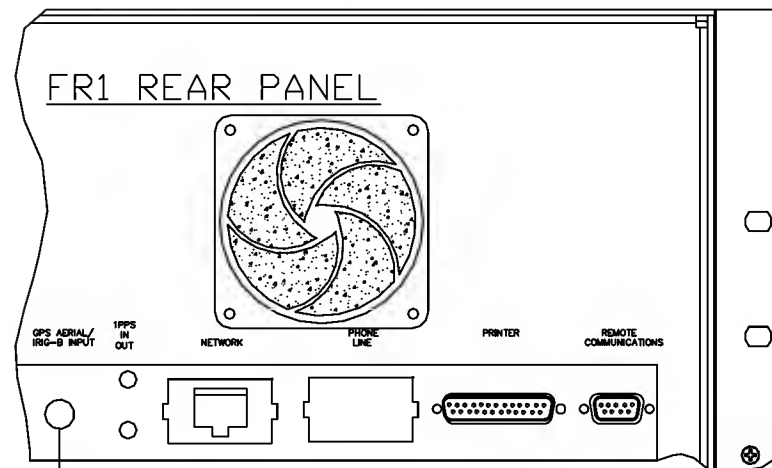
GPS-1



GPS
ANTENNA

150 ft RG-6 type cable
(max. 150ft)

BNC type connector



NOTE: ANTENNA SHALL BE INSTALLED
OUTSIDE OF THE CONTROL ROOM

NOTES

INSTALLATION NOTES:
1. CUSTOMER WIRING SHOWN DASHED. AMETEK FACTORY WIRING SHOWN SOLID.
2. EACH CABINET IS EQUIPPED WITH 90° DOOR STOPS AND PADLOCK TYPE DOOR HANDLES.
3. THE CABINET IS RATED IP41, WITH FRONT / REAR ACCESS & TOP / BOTTOM CABLE ENTRY.
EXTERIOR FINISH: RAL7038
INTERIOR FINISH : RAL9003

SERVICE NOTES:
1. THE TR-2000 SYSTEM IS WIRED FOR 32 ANALOG AND 128 DIGITAL CHANNELS.
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CHANNELS VOLTAGE: REF. WIRING
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7. SYSTEM POWER IS 125VDC. THE COURTESY OUTLET, LIGHT AND PRINTER REQUIRE 220VAC. THERE IS ALSO 120VAC OUTLET AVAILABLE.
8. TR-2000 VISUAL STATUS INDICATORS ARE ON THE FRONT OF THE TR-2000. STATUS OUTPUTS ARE WIRED TO X101.
9. ALL LABELING TAGS SHOWN ARE ENGRAVED LAMACOID, BLACK LETTERING ON WHITE BACKGROUND. REFERENCE PAGE 9 FOR TAG DETAILS.
10. ALL DIMENSIONS ARE IN INCHES [MM].
11. CIRCLED NUMBERS WITH ARROWS INDICATE THE BILL OF MATERIAL REFERENCED ON PG 10.

33

AMETEK S.O.# : 11002273-2

AMETEK DRAWING# : D-1105-211

SAITE P.O. # : API-D-0826-06656

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-305614

ISSUED FOR CONSTRUCTION

AS-BUILT BY _____ DATE _____

00 27/01/15 MA ISSUED FOR CONSTRUCTION MP

REV. NO. DATE BY DESCRIPTION CHKD. CERT. APP'D.

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MA CHECKED BY: _____ SCALE: NONE
DATE STARTED: 28-11-12 DATE COMPLETED: _____
DPR'G. DEPT.: _____ ENG. DEPT.: _____

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED

CERTIFIED BY: _____ DATE: _____

TR-2200 FAULT RECORDER
GPS / IRIG-B INPUT, FR1
MODIFICATION AT IBN ZAHR S/S
JUBAIL SAUDI ARABIA

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	X43	ED-305945	15 of 24	00
			1105-211_15.DWG		
			SEC-ERB CAD-A (2002/04)		
			DMS VECTOR		
			Code03		

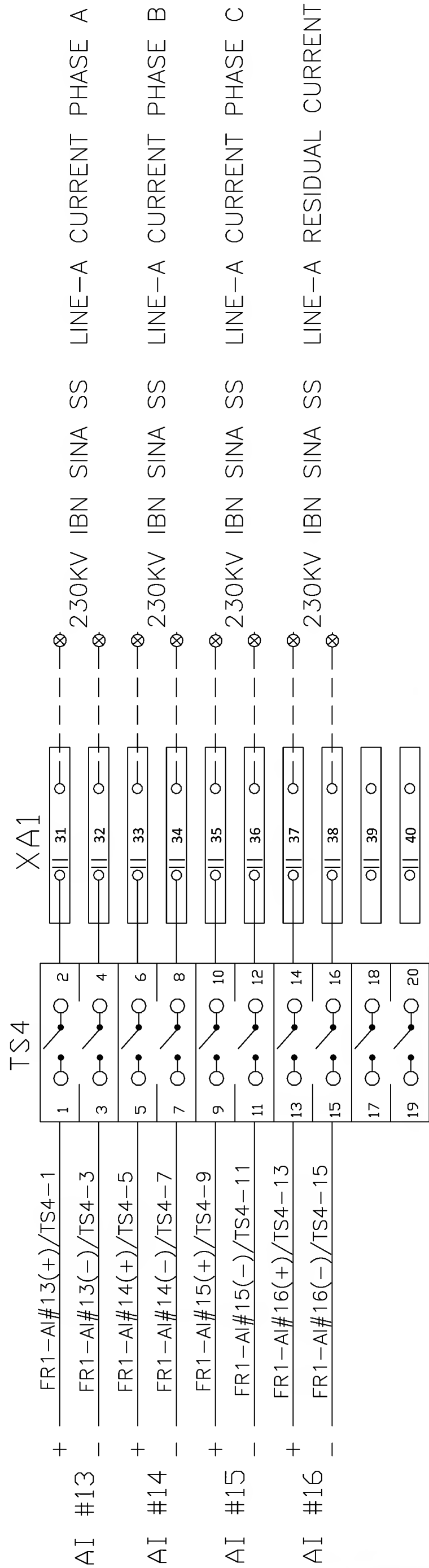
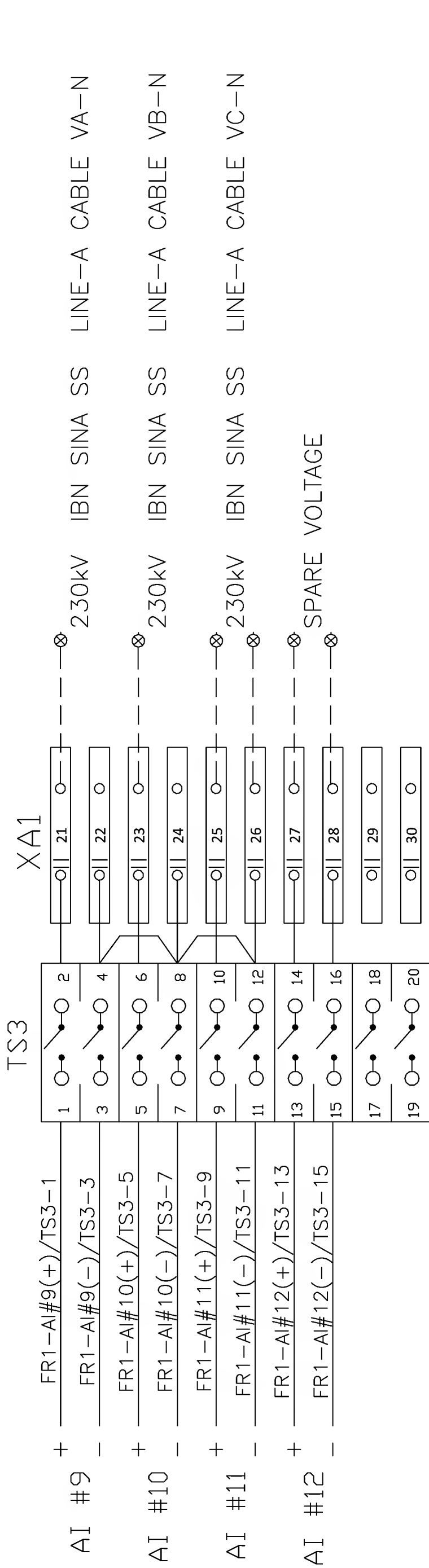
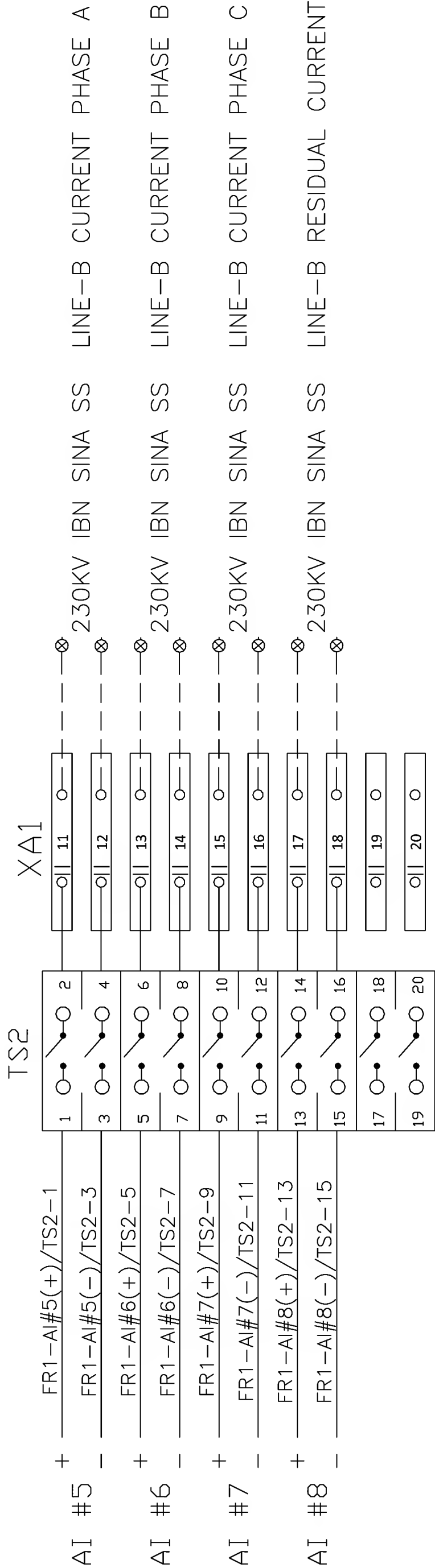
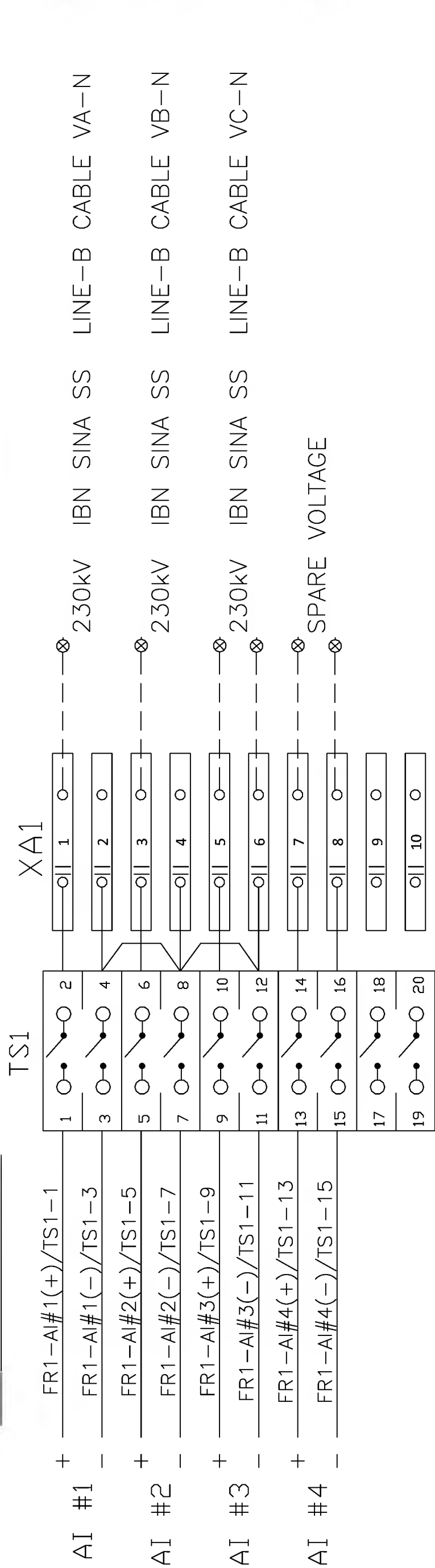
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ANALOG INPUTS

WIRE MARKER

FIELD CONNECTIONS

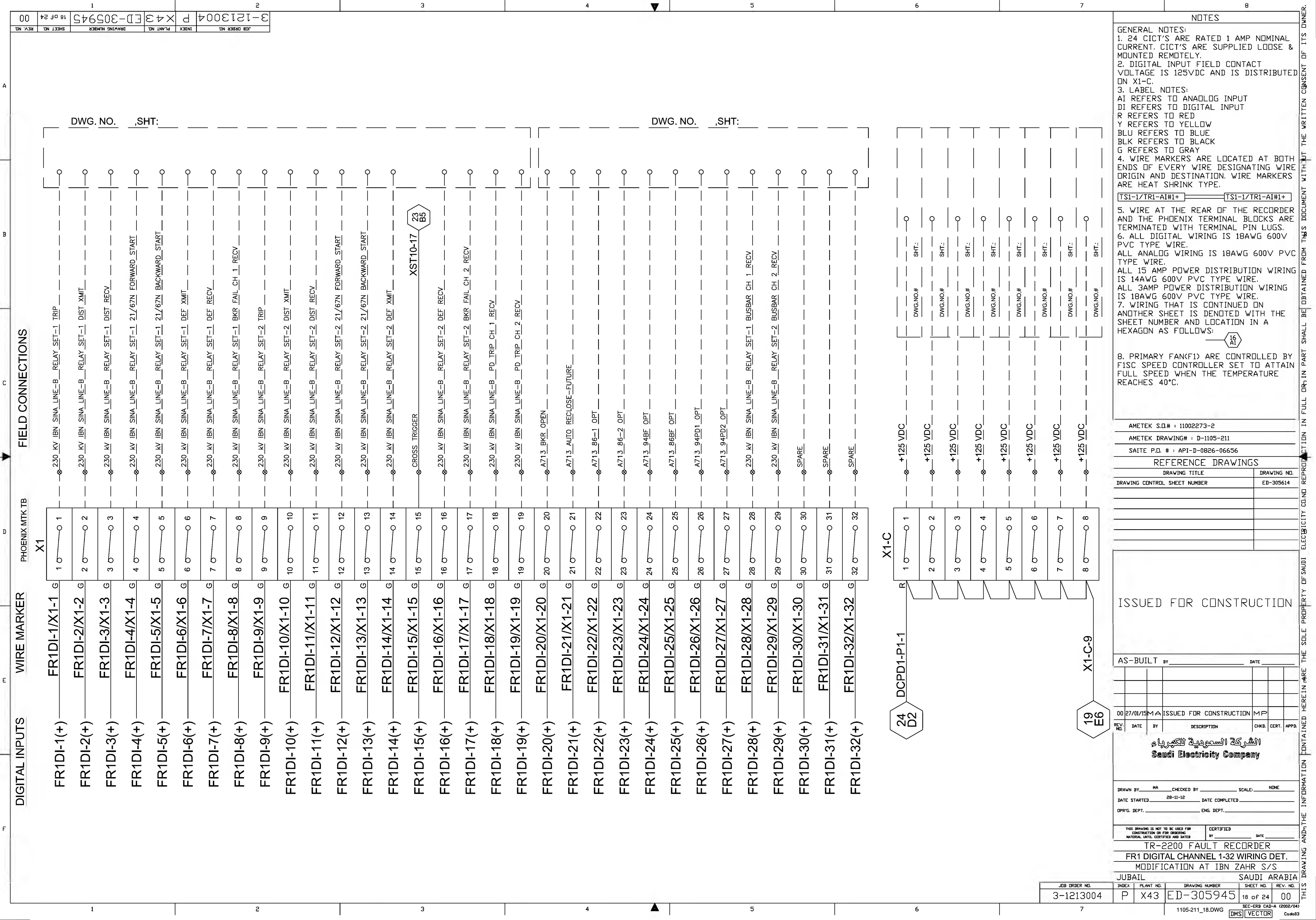
JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	X43	ED-305945	16 of 24	00



NOTE : ABB FT-1 TYPE TEST SWITCH

NOTES					
GENERAL NOTES: 1. 24 CICT'S ARE RATED 1 AMP NOMINAL CURRENT. CICT'S ARE SUPPLIED LOOSE & MOUNTED REMOTELY. 2. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC AND IS DISTRIBUTED ON X1-C. 3. LABEL NOTES: AI REFERS TO ANALOG INPUT DI REFERS TO DIGITAL INPUT R REFERS TO RED Y REFERS TO YELLOW BLU REFERS TO BLUE BLK REFERS TO BLACK G REFERS TO GRAY 4. WIRE MARKERS ARE LOCATED AT BOTH ENDS OF EVERY WIRE DESIGNATING WIRE ORIGIN AND DESTINATION. WIRE MARKERS ARE HEAT SHRINK TYPE. 5. WIRE AT THE REAR OF THE RECORDER AND THE PHOENIX TERMINAL BLOCKS ARE TERMINATED WITH TERMINAL PIN LUGS. 6. ALL DIGITAL WIRING IS 18AWG 600V PVC TYPE WIRE. ALL ANALOG WIRING IS 18AWG 600V PVC TYPE WIRE. ALL 15 AMP POWER DISTRIBUTION WIRING IS 14AWG 600V PVC TYPE WIRE. ALL 3AMP POWER DISTRIBUTION WIRING IS 18AWG 600V PVC TYPE WIRE. 7. WIRING THAT IS CONTINUED ON ANOTHER SHEET IS DENOTED WITH THE SHEET NUMBER AND LOCATION IN A HEXAGON AS FOLLOWS: 8. PRIMARY FAN(F1) ARE CONTROLLED BY F1SC SPEED CONTROLLER SET TO ATTAIN FULL SPEED WHEN THE TEMPERATURE REACHES 40°C.					
AMETEK S.O.# : 11002273-2					
AMETEK DRAWING# : D-1105-211					
SAITE P.O. # : API-D-0826-06656					
REFERENCE DRAWINGS					
DRAWING TITLE			DRAWING NO.		
DRAWING CONTROL SHEET NUMBER			ED-305614		
ISSUED FOR CONSTRUCTION					
AS-BUILT BY _____ DATE _____					
00 27/01/15 MA ISSUED FOR CONSTRUCTION MP					
REV. DATE BY DESCRIPTION CHKD. CERT. APPD.					
الشركة السعودية للكهرباء Saudi Electricity Company					
DRAWN BY: MA CHECKED BY: _____ SCALE: NONE					
DATE STARTED: 28-11-12 DATE COMPLETED: _____					
OPR'G. DEPT. _____ ENG. DEPT. _____					
THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED			CERTIFIED BY: _____ DATE: _____		
TR-2200 FAULT RECORDER					
FR1 ANALOG INPUTS 1-16 WIRING					
MODIFICATION AT IBN ZAHR S/S					
JUBAIL			SAUDI ARABIA		
JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	X43	ED-305945	16 of 24	00
1105-211_16.DWG					
SEC-ERB CAD-A (2002/04)					
DMS VECTOR					
Code03					

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DIGITAL INPUTS

WIRE MARKER

PHOENIX MTK TB

FIELD CONNECTIONS

FR1DI-33(+)

FR1DI-34(+)

FR1DI-35(+)

FR1DI-36(+)

FR1DI-37(+)

FR1DI-38(+)

FR1DI-39(+)

FR1DI-40(+)

FR1DI-41(+)

FR1DI-42(+)

FR1DI-43(+)

FR1DI-44(+)

FR1DI-45(+)

FR1DI-46(+)

FR1DI-47(+)

FR1DI-48(+)

FR1DI-49(+)

FR1DI-50(+)

FR1DI-51(+)

FR1DI-52(+)

FR1DI-53(+)

FR1DI-54(+)

FR1DI-55(+)

FR1DI-56(+)

FR1DI-57(+)

FR1DI-58(+)

FR1DI-59(+)

FR1DI-60(+)

FR1DI-61(+)

FR1DI-62(+)

FR1DI-63(+)

FR1DI-64(+)

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58

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60

61

62

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64

SPARE

SPARE

SPARE

SPARE

SPARE

230 KV IBN SINA LINE-A_RELAY_SET-1 TRIP

230 KV IBN SINA LINE-A_RELAY_SET-1 DIST XMIT

230 KV IBN SINA LINE-A_RELAY_SET-1 DIST REC V

230 KV IBN SINA LINE-A_RELAY_SET-1 21/67N FORWARD_START

230 KV IBN SINA LINE-A_RELAY_SET-1 21/67N BACKWARD_START

230 KV IBN SINA LINE-A_RELAY_SET-1 DEF XMIT

230 KV IBN SINA LINE-A_RELAY_SET-1 DEF REC V

230 KV IBN SINA LINE-A_RELAY_SET-1 BKR FAIL CH 1 REC V

230 KV IBN SINA LINE-A_RELAY_SET-2 TRIP

230 KV IBN SINA LINE-A_RELAY_SET-2 DIST XMIT

230 KV IBN SINA LINE-A_RELAY_SET-2 DIST REC V

230 KV IBN SINA LINE-A_RELAY_SET-2 21/67N FORWARD_START

230 KV IBN SINA LINE-A_RELAY_SET-2 21/67N BACKWARD_START

230 KV IBN SINA LINE-A_RELAY_SET-2 DEF XMIT

CROSS TRIGGER

230 KV IBN SINA LINE-A_RELAY_SET-2 DEF REC V

230 KV IBN SINA LINE-A_RELAY_SET-2 BKR FAIL CH 2 REC V

230 KV IBN SINA LINE-A_PD_TRIP_CH 1 REC V

230 KV IBN SINA LINE-A_PD_TRIP_CH 2 REC V

A706 BKR_OPEN

A706_AUTO_RECLOUSE-FUTURE

A706_86-1 OPT

A706_86-2 OPT

A706_94BF OPT

A706_86BF OPT

A706_94PD1 OPT

A706_94PD2 OPT

DWG. NO.

,SHT:

18

E7

X1-C-8

X1-C

9

10

11

12

13

14

15

16

+125 VDC

+125 VDC

+125 VDC

+125 VDC

+125 VDC

+125 VDC

+125 VDC

+125 VDC

DWG.NO#

DWG.NO#

DWG.NO#

DWG.NO#

DWG.NO#

DWG.NO#

DWG.NO#

DWG.NO#

SHT.:

SHT.:

SHT.:

SHT.:

SHT.:

SHT.:

SHT.:

SHT.:

20

E6

X1-C-17

X1-C

9

10

11

12

13

14

15

16

+125 VDC

+125 VDC

+125 VDC

+125 VDC

+125 VDC

+125 VDC

+125 VDC

+125 VDC

DWG.NO#

DWG.NO#

DWG.NO#

DWG.NO#

DWG.NO#

DWG.NO#

DWG.NO#

DWG.NO#

SHT.:

SHT.:

SHT.:

SHT.:

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SHT.:

SHT.:

SHT.:

00

27/01/15

MA

ISSUED FOR CONSTRUCTION

MP

الشركة السعودية للكهرباء

Saudi Electricity Company

DRAWN BY: MA

CHECKED BY:

SCALE: NONE

DATE STARTED: 28-11-12

DATE COMPLETED:

OPR'G. DEPT.:

ENG. DEPT.:

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED

CERTIFIED BY: DATE:

TR-2200 FAULT RECORDER

FR1 DIGITAL CHANNEL 33-64 WIRING DET.

MODIFICATION AT IBN ZAHR S/S

JUBAIL

SAUDI ARABIA

JOB ORDER NO.

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.

REV. NO.

3-1213004

P

X43

ED-305945

19 of 24

00

1105-211_19.DWG

DMS VECTOR

Code03

NOTES

GENERAL NOTES:
1. 24 CICT'S ARE RATED 1 AMP NOMINAL CURRENT. CICT'S ARE SUPPLIED LOOSE & MOUNTED REMOTELY.
2. DIGITAL INPUT FIELD CONTACT VOLTAGE IS 125VDC AND IS DISTRIBUTED ON X1-C.
3. LABEL NOTES:
AI REFERS TO ANALOG INPUT
DI REFERS TO DIGITAL INPUT
R REFERS TO RED
Y REFERS TO YELLOW
BLU REFERS TO BLUE
BLK REFERS TO BLACK
G REFERS TO GRAY
4. WIRE MARKERS ARE LOCATED AT BOTH ENDS OF EVERY WIRE DESIGNATING WIRE ORIGIN AND DESTINATION. WIRE MARKERS ARE HEAT SHRINK TYPE.
5. WIRE AT THE REAR OF THE RECORDER AND THE PHOENIX TERMINAL BLOCKS ARE TERMINATED WITH TERMINAL PIN LUGS.
6. ALL DIGITAL WIRING IS 18AWG 600V PVC TYPE WIRE.
ALL ANALOG WIRING IS 18AWG 600V PVC TYPE WIRE.
ALL 15 AMP POWER DISTRIBUTION WIRING IS 14AWG 600V PVC TYPE WIRE.
ALL 3AMP POWER DISTRIBUTION WIRING IS 18AWG 600V PVC TYPE WIRE.
7. WIRING THAT IS CONTINUED ON ANOTHER SHEET IS DENOTED WITH THE SHEET NUMBER AND LOCATION IN A HEXAGON AS FOLLOWS:
8. PRIMARY FAN(F1) ARE CONTROLLED BY F1SC SPEED CONTROLLER SET TO ATTAIN FULL SPEED WHEN THE TEMPERATURE REACHES 40°C.

TS1-1/TR1-AI#1+ TS1-1/TR1-AI#1+

16 AI

00

24

19 of

00

3-1213004

P

X43

ED-305945

19 of 24

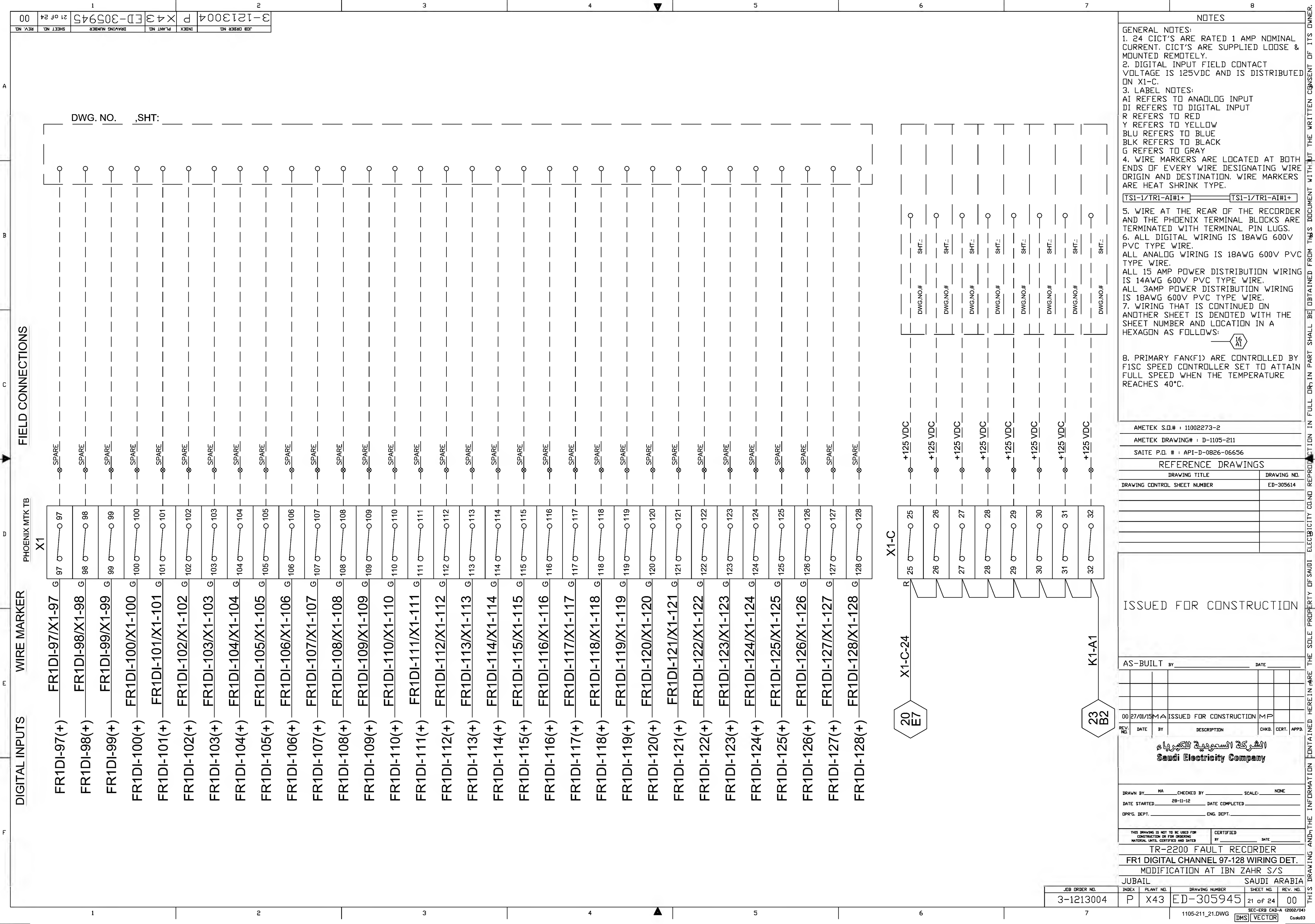
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1105-211_19.DWG

DMS VECTOR

Code03

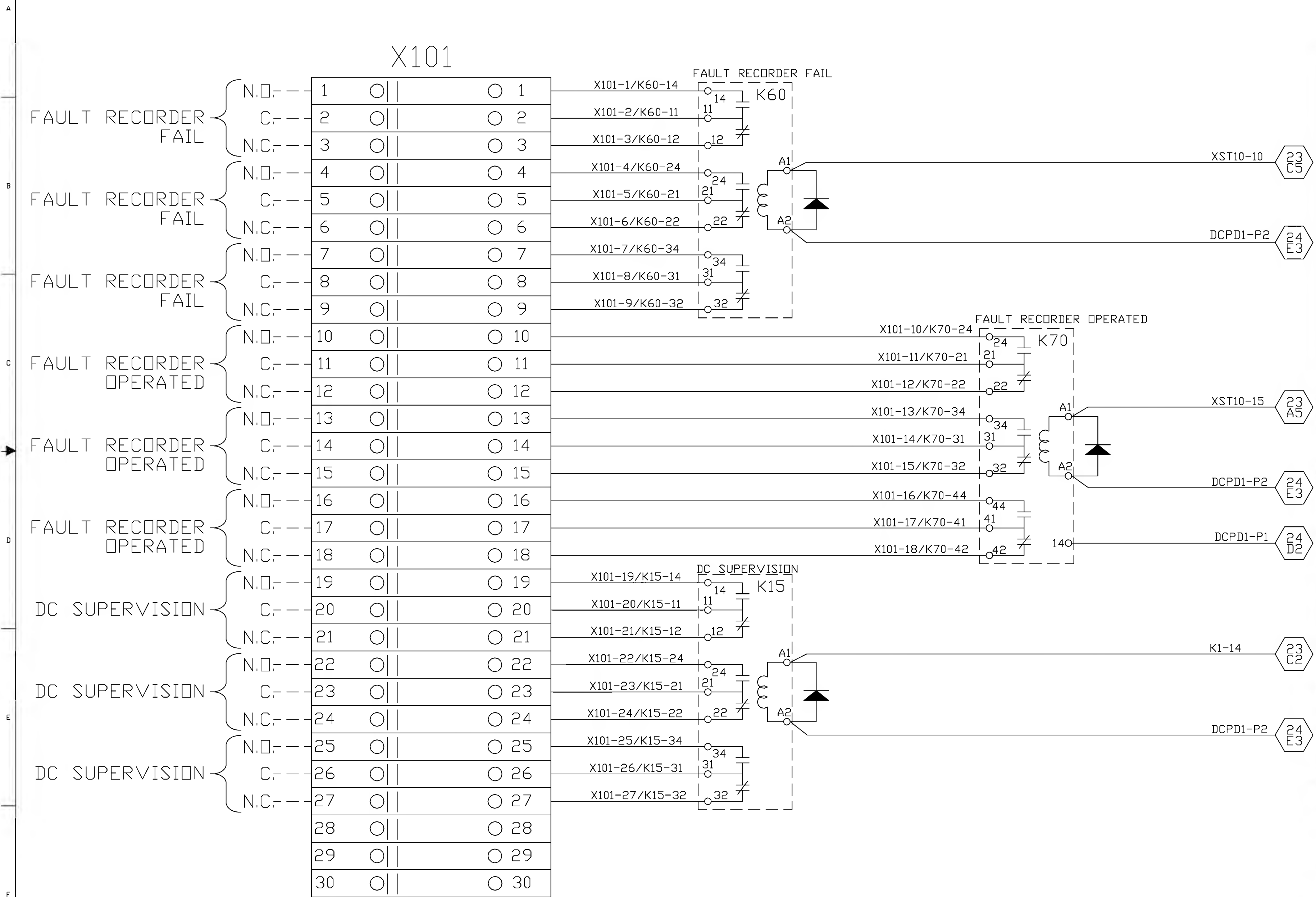
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- STATUS RELAY NOTES:
1. POWER (STATUS OUTPUT 1) CLOSED
WHEN POWER IS ON.
2. ON-LINE (STATUS OUTPUT 2) CLOSED
WHEN TR IS ON-LINE.
3. TRIGGERED (STATUS RELAY 3) WILL
CLOSE FOR 0.5S WHEN TR IS TRIGGERED.
4. ATTENTION (STATUS OUTPUT 4) OPEN
UNDER NORMAL OPERATION.
5. RELAY K60 (FAULT RECORDER FAIL)
-ENERGIZED UNDER NORMAL OPERATION
-DE-ENERGIZES UPON LOSS OF POWER, TR
GOING OFF-LINE, OR UPON ATTENTION
STATUS ALARM.
6. RELAY K70 (FAULT RECORDER
OPERATED)
-DE-ENERGIZED UNDER NORMAL OPERATION.
-ENERGIZES UPON TR TRIGGERING.
-ADJUSTABLE ENERGIZING TIME 0.1 SEC. TO
270 SEC.
7. RELAY K15 (DC SUPERVISION)
-ENERGIZED UNDER NORMAL OPERATION.
-DE-ENERGIZES UPON LOSS OF FIELD
CONTACT / RELAY VOLTAGE.
8. ALL RELAYS ARE SHOWN IN SHELF
STATE.
9. DIGITAL INPUT #15 IS USED FOR
CROSS-TRIGGERING IN ALL RECORDERS.

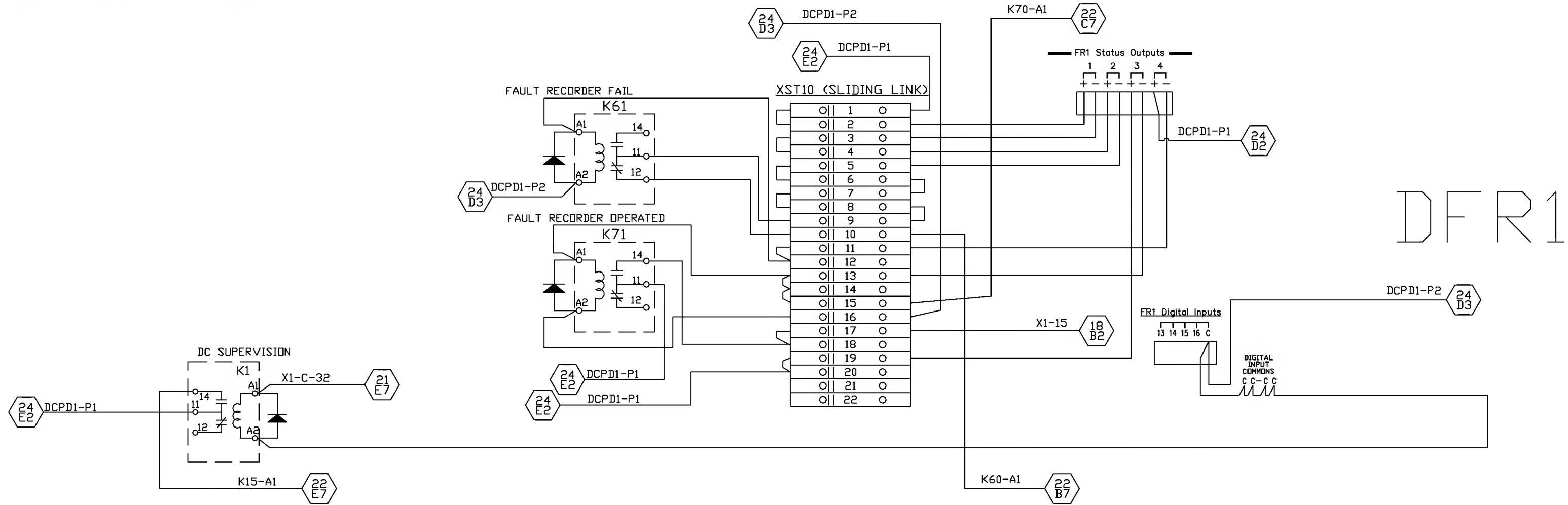
DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-305614

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JOB ORDER NO.		INDEX		PLANT NO.		DRAWING NUMBER		SHEET NO.		REV. NO.		3-1213004		ED-305945	
3-1213004		P		X43		ED-305945		23 of 24		00					

INDIVIDUAL STATUS RELAYS



- NOTES
- STATUS RELAY NOTES:
1. POWER (STATUS OUTPUT 1) CLOSED WHEN POWER IS ON.
 2. ON-LINE (STATUS OUTPUT 2) CLOSED WHEN TR IS ON-LINE.
 3. TRIGGERED (STATUS RELAY 3) WILL CLOSE FOR 0.5S WHEN TR IS TRIGGERED.
 4. ATTENTION (STATUS OUTPUT 4) OPEN UNDER NORMAL OPERATION.
 5. RELAY K60 (FAULT RECORDER FAIL) -ENERGIZED UNDER NORMAL OPERATION -DE-ENERGIZES UPON LOSS OF POWER, TR GOING OFF-LINE, OR UPON ATTENTION STATUS ALARM.
 6. RELAY K70 (FAULT RECORDER OPERATED) -DE-ENERGIZED UNDER NORMAL OPERATION. -ENERGIZES UPON TR TRIGGERING. -ADJUSTABLE ENERGIZING TIME 0.1 SEC. TO 270 SEC.
 7. RELAY K15 (DC SUPERVISION) -ENERGIZED UNDER NORMAL OPERATION. -DE-ENERGIZES UPON LOSS OF FIELD CONTACT / RELAY VOLTAGE.
 8. ALL RELAYS ARE SHOWN IN SHELF STATE.
 9. DIGITAL INPUT #15 IS USED FOR CROSS-TRIGGERING IN ALL RECORDERS.

AMETEK S.O.# : 11002273-2
AMETEK DRAWING# : D-1105-211
SAITE P.O. # : API-D-0826-06656

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.
DRAWING CONTROL SHEET NUMBER	ED-305614

ISSUED FOR CONSTRUCTION

AS-BUILT BY _____ DATE _____

00 27/01/15 MA ISSUED FOR CONSTRUCTION MP

REV. NO. DATE BY DESCRIPTION CHKD. CERT. APP'D.

الشركة السعودية للكهرباء
Saudi Electricity Company

DRAWN BY: MA CHECKED BY: _____ SCALE: NONE
DATE STARTED: 28-11-12 DATE COMPLETED: _____
DPR'G. DEPT.: _____ ENG. DEPT.: _____

THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OR FOR ORDERING MATERIAL UNTIL CERTIFIED AND DATED

CERTIFIED BY: _____ DATE: _____

TR-2200 FAULT RECORDER

INDIVIDUAL STATUS RELAYS

MODIFICATION AT IBN ZAHR S/S

JUBAIL SAUDI ARABIA

JOB ORDER NO.	INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
3-1213004	P	X43	ED-305945	23 of 24	00
			1105-211_23.DWG	SEC-ERB CAD-A (2002/04)	
			DMS VECTOR		Code03

